A 2001-31
I-A-02

MEMORANDUM

SUBJECT: Proposed Implementation Guidance for the Revised Ozone and Particulate Matter (PM) National Ambient Air Quality Standards (NAAQS) and the Regional Haze Program

FROM: John S. Seitz, Director
Office of Air Quality Planning and Standards (MD-10)

TO: Regional Office Air Division Directors

On July 16, 1997, the President issued a memorandum to EPA on the implementation of the revised air quality standards for ozone and PM. The purpose of the attached document is to provide guidance on implementing the revised ozone and PM NAAQS and the regional haze program consistent with the Clean Air Act and the President's memorandum.

[Notes to guidance commenter:

This draft replaces the draft of August 14, 1998. It includes guidance to replace the "placeholders" of the August draft. As a result of providing guidance for the placeholder sections, it also includes a number of changes to certain other parts of the draft guidance. The attached table presents a summary of the major changes that were made; the text of the draft indicates where material is new or revised since the August version. In addition, EPA received a number of comments on the August version that EPA has not yet addressed. A number of commenters expressed the desire to see and comment on the entire document rather than only on part of it. Therefore, the entire document--including portions that were made available in the August version--is being made available for comment so that EPA can review all of the comments together. Comments received on the August version do not have to be resubmitted. The EPA will consider the comments on the August 14, 1998, version along with the comments on this version in preparing the final guidance document. The EPA plans to issue the final guidance document shortly after the Agency reviews and considers any comments.

For the revised ozone NAAQS, the guidance covers a classification scheme, including relevant action dates for the planning process; a policy clarifying the requirement that States adopt reasonably

available control requirements and reasonably available control technology (RACM/RACT) into ozone nonattainment area SIPs for the ozone standard; and
details on the SIP requirements for ozone nonattainment areas (transitional, traditional and international transport).

For the revised PM_{10} NAAQS, the guidance covers a classification scheme for the revised PM_{10} NAAQS including relevant dates for the planning process; SIP requirements for serious and moderate areas under the revised PM_{10} NAAQS; and a clarification of the requirement that States adopt RACM/RACT into PM nonattainment area SIPs.

For the $PM_{2.5}$ NAAQS, because of the longer timeframe for collecting monitoring data, designating nonattainment areas and developing SIPs, the guidance notes where technical and other guidance is still under development. In certain cases, however, principles relating to implementing the $PM_{2.5}$ NAAQS are provided.

For the $PM_{2.5}$ NAAQS and the regional haze program, the guidance provides placeholders for the additional guidance that EPA plans to issue after final rulemaking on the regional haze rule; that guidance will address inter-program coordination and an update on regional modeling.

The purpose of this guidance is to set forth EPA's current views on the issues identified above. These issues will be addressed in future rulemakings as appropriate (e.g., actions approving or disapproving SIP submittals and actions establishing SIP submittal deadlines). In those rulemakings, EPA plans to propose to take a particular action based in whole or in part on its views of the relevant issues, and the public will have an opportunity to comment on EPA's interpretations during the rulemakings. When EPA issues final rules based on its views at that time, those views will be binding on the States, the public, and EPA as a matter of law.

A complete listing of the guidance and other actions EPA plans to issue to implement the revised ozone and PM NAAQS can be found in a table on EPA's implementation website (http://ttnwww.rtpnc.epa.gov/implement/actions.htm). If you have any questions concerning implementation of this guidance, please contact Lydia Wegman, Director of the Air Quality Strategies and Standards Division. The overall staff contact is John Silvasi (919-541-5666); additional staff contacts are: Chris Stoneman (ozone) at 919/541-0823, Larry Wallace (PM) at 919/541-0906, and Rich Damberg (regional haze) at 919/541-5592.

Attachment

cc: Margo Oge, OMS

Sally Shaver, AQSSD
Bill Hunt, EMAD
Tom Curran, ITPID
Lydia Wegman, OAQPS
Rich Ossias, OGC

bcc: Anna Duncan, OAQPS-DC
Gay MacGregor, OMS
Mark Wolcott, OMS
Kathryn Sargeant, OMS
Denise Gerth, AQSSD
Sharon Reinders, AQSSD
Chris Stoneman, AQSSD
John Silvasi, AQSSD
Tom Helms, AQSSD
Joe Paisie, AQSSD
Robin Dunkins, AQSSD
Larry Wallace, AQSSD
Eric Ginsburg, AQSSD
Bruce Polkowsky, AQSSD
Bill Hamilton, AQSSD
Bill Harnett, AQSSD
Linda Metcalf, AQSSD
Ellen Baldridge, EMAD
Ned Meyer, EMAD
Bill Kuykendal, EMAD
Warren Freas, EMAD
Dave Guinnup, EMAD
Joe Tikvart, EMAD
Rich Scheffe, EMAD
David Misenheimer, EMAD
David Mobley, EMAD
Karen Blanchard, ITPID
David Solomon, ITPID
Jan Tierney, OGC
Kevin McLean, OGC
Jon Devine, OGC
Mike Prosper, OGC

Proposed EPA Guidance (November 17, 1998 Draft)

Implementation Guidance for the Revised Ozone and Particulate Matter (PM) National Ambient Air Quality Standards (NAAQS) and the Regional Haze Program
MAJOR CHANGES FROM 8/14/98 VERSION

GUIDANCE ELEMENT	MAJOR CHANGES FROM 8/14/98 VERSION
Preface	1. Additional information added on tribal involvement 2. Information added on small entity involvement
Introduction	Updated list of what guidance covers
REVISED 8-HOUR OZONE NAAQS	
1. Classification Scheme	Revision to account for new attainment date definition
a. Transitional Areas	ditto
b. Traditional Areas	ditto
c. International Transport Areas	Revision to account for new attainment date definition
2. RACM/RACT Policy	No significant change
3. SIP Requirements for Transitional Areas	
a. Qualifications for the Transitional Classification	Addition of requirement that the following are necessary to obtain transitional classification: attainment level emission budgets and commitment to revise SIP under supplemental attainment planning process
b. Emissions Inventory, Modeling and Attainment Demonstration	Addition of reference to new draft modeling guidance for transitional areas
c. RACM/RACT	No significant change
d. Reasonable Further Progress	Revision to account for new definition of attainment date, SIP implementation date, and deletion of air quality test
e. Contingency Measures	No significant change
f. New Source Review (NSR)	No significant change

Proposed EPA Guidance (November 17, 1998 Draft)

GUIDANCE ELEMENT	MAJOR CHANGES FROM 8/14/98 VERSION
g. Conformity	Addition of information about forthcoming requirements for conformity
4. SIP Requirements for Traditional Areas	
a. Qualifications for the Traditional Classification	No significant change
b. Emissions Inventory, Modeling and Attainment Demonstration	1. Addition of reference to draft emissions inventory and modeling guidance 2. Revision on projection year to account for revised definition of attainment date 3. Addition of requirement that emissions budgets are needed as part of attainment demonstration
c. RACM/RACT	No significant change
d. Reasonable Further Progress	Addition of guidance on RFP
e. Contingency Measures	Addition of guidance on contingency measures
f. NSR	Addition of clarification concerning applicability and emissions offset requirements
g. Conformity	No significant change
h. [new] Credit for National Measures	Addition of section concerning Tier 2 motor vehicle controls & sulfur-in-gasoline controls
i. [new] Areas Affected By Transport	Addition of section
5. SIP Requirements for International Transport Areas	
a. Qualifications for the International Transport Classification	No significant change
b. Emissions Inventory, Modeling and Attainment Demonstration	Addition of guidance
c. RACM/RACT	No significant change
d. Reasonable Further Progress	Addition of guidance

Proposed EPA Guidance (November 17, 1998 Draft)

GUIDANCE ELEMENT	MAJOR CHANGES FROM 8/14/98 VERSION
e. Contingency Measures	Addition of guidance
f. NSR	Addition of clarification concerning applicability and emissions offset requirements
g. Conformity	No significant change
6. Ozone Transport Region	Not yet available
REVISED PM NAAQS	
1. Classification Scheme	No significant change
a. PM_{10} NAAQS	No significant change
(1) Moderate Areas	No significant change
(2) Serious Areas	No significant change
b. $PM_{2.5}$ NAAQS	No significant change
2. RACM/RACT Policy	No significant change
a. PM_{10} NAAQS	No significant change
b. $PM_{2.5}$ NAAQS	No significant change
3. SIP Requirements for PM_{10} areas	No significant change
a. Moderate Areas	
(1) Qualifications for the Moderate Classification	No significant change

Proposed EPA Guidance (November 17, 1998 Draft)

GUIDANCE ELEMENT	MAJOR CHANGES FROM 8/14/98 VERSION
(2) Emissions Inventory, Modeling and Attainment Demonstration	No significant change
(3) RACM/RACT	No significant change
(4) Reasonable Further Progress	No significant change
(5) Contingency Measures	No significant change
(6) NSR	No significant change
(7) Conformity	No significant change
b. Serious Areas	
(1) Qualifications for the Serious Classification	No significant change
(2) Emissions Inventory, Modeling and Attainment Demonstration	No significant change
(3) BACM/BACT	No significant change
(4) Reasonable Further Progress	No significant change
(5) Contingency Measures	No significant change
(6) NSR	No significant change
(7) Conformity	No significant change
4. SIP Requirements for $PM_{2.5}$ Areas	
a. [New title] Qualifications for Classification	Addition of explanation that EPA will issue detailed guidance later

Proposed EPA Guidance (November 17, 1998 Draft)

GUIDANCE ELEMENT	MAJOR CHANGES FROM 8/14/98 VERSION
b. Emissions Inventory, Modeling and Attainment Demonstration	1. Addition of reference to emission inventory guidance & ozone modeling guidance (contains PM "principles") 2. Addition of explanation that detailed guidance is forthcoming
c. RACM/RACT	No significant change
d. Reasonable Further Progress	Addition of explanation that EPA will issue detailed guidance later
e. Contingency Measures	Addition of explanation that EPA will issue detailed guidance later
f. NSR	Addition of clarification concerning applicability and emissions offset requirements
g. Conformity	Addition of explanation that EPA will issue detailed guidance later
h. [new] $PM_{2.5}$ Areas Affected by Transport	New guidance section added
REVISED OZONE and PM NAAQS	
1. Nonattainment Area Boundaries	Addition of guidance for ozone and $PM_{2.5}$
2. Emergency Episode Procedures	Addition of explanation of forthcoming rulemaking
3. Emissions Inventory Projections	Explanation of delay in new guidance & recommendation to rely on existing guidance in meantime
4. Enforceable Regulations	Guidance added
5. Corrective Actions	Text added to describe CAA provisions for failure to attain & intention to draft further guidance later; addition of supplemental attainment planning process to supplement CAA provisions for findings of failure to attain
6. Economic Incentive Programs	Text added to reference guidance under development
$PM_{2.5}$ NAAQS and REGIONAL HAZE PROGRAM	

Proposed EPA Guidance (November 17, 1998 Draft)

GUIDANCE ELEMENT	MAJOR CHANGES FROM 8/14/98 VERSION
1. Inter-program Coordination	Explanation that guidance will be developed after final RH rule is published
2. Update on Regional Modeling	Explanation that guidance will be developed after final RH rule is published
ALL PROGRAMS (Ozone, $PM_{2.5}$, Regional Haze)	
Framework for Planning	New guidance section added
Attachment A: Classification Scheme for the 8-Hour Ozone NAAQS	Revision to account for new attainment dates definition
Attachment B: Classification Scheme for the PM_{10} NAAQS	No significant change
Attachment C: Act Legal Authority	Addition of discussion of international border areas
Attachment D: Rationale for Definition of Attainment Date	New Attachment Added
Attachment E: Alternative Attainment Demonstration for Areas Affected by Transport	New Attachment Added
Attachment F: Framework for Planning--Additional Information	New Attachment Added
Attachment G: Guidance for Using Modeling and Supporting Analyses to Evaluate Emissions Reductions Strategies	New Attachment Added

Implementation Guidance for the Revised Ozone and Particulate Matter (PM) National Ambient Air Quality Standards (NAAQS) and the Regional Haze Program

PREFACE

The purpose of this guidance is to set forth EPA's current views on the issues identified above. These issues will be addressed in future rulemakings as appropriate (e.g., actions approving or disapproving State implementation plan (SIP) submittals and actions establishing SIP submittal deadlines). In those rulemakings, EPA plans to propose to take a particular action based in whole or in part on its views of the relevant issues, and the public will have an opportunity to comment on EPA's interpretations during the rulemakings. When EPA issues final rules based on its views at that time, those views will be binding on the States, the public, and EPA as a matter of law.

In addition, under the recently promulgated Tribal Authority Rule[1], eligible tribal governments may elect to develop their own air quality management programs. Where tribal governments choose not to implement air programs, the EPA has the authority under the Clean Air Act (Act) to ensure implementation of programs necessary to protect tribal air resources. This implementation guidance is directly applicable to the States for the development of SIPs for the revised ozone and PM standards and the regional haze program. Eligible tribes have the option of developing tribal implementation plans. Whereas a State Governor can request designation of nonattainment areas within the State, the request generally would not apply to portions of nonattainment areas located within Indian Country. The eligible tribal government can request designation of the tribal portion of a nonattainment area. If a tribe does not make such a request, EPA can make such a designation. Thus, the Regional Offices should work with States and tribes to ensure that the basic principles of this guidance are implemented and protection of air quality is ensured nationwide. The EPA intends to issue further clarifying guidance for tribes, including but not limited to, boundaries/designations, transport issues, and tribal implementation plans (TIPs).

The EPA realizes that small businesses and small governmental organizations have unique concerns related to NAAQS implementation. These small entities have resource limitations that larger entities may not have. As a result, the EPA has taken several steps to ensure that the concerns of small entities will be considered when NAAQS implementation strategies are developed. The EPA met with small entity representatives on three occasions to obtain their views on mitigation of NAAQS implementation impacts. A panel composed of EPA, Office of Managmement and Budget (OMB) and Small Business Administration (SBA) representatives was then convened in order to address the implementation concerns of small entities, and a report was prepared by this panel addressing these

[1] "Indian Tribes: Air Quality Planning and Management," 63 FR 7254, February 12, 1998.

issues. In addition, small entities were represented on the Federal Advisory Committee Act (FACA) Subcommittee on Ozone, Particulate Matter, and Regional Haze Implementation Programs that the EPA convened in order to advise the Agency on common sense and cost-effective NAAQS implementation strategies. Discussions were held at the FACA Subcommittee on Ozone, Particulate Matter, and Regional Haze Implementation Programs meetings on ways to mitigate small entity impacts. These activities resulted in EPA issuing guidance in April 1998 to the State Air Program Directors which outlined potential implementation strategies that could mitigate adverse impacts on small sources and encouraged the States to make use of these strategies whenever possible and appropriate.

Note: Where this guidance document refers to the term "county," it should be understood as county or county-equivalent, such as parishes in Louisiana.

CONTENTS

Introduction
Revised 8_Hour Ozone NAAQS
Revised PM NAAQS
Revised Ozone and PM NAAQS
$PM_{2.5}$ NAAQS and Regional Haze Program
All Programs (Ozone, $PM_{2.5}$, Regional Haze)

Attachment A: Classification Scheme for the 8_Hour Ozone NAAQS
Attachment B: Classification Scheme for the PM_{10} NAAQS
Attachment C: Act Legal Authority
Attachment D: Rationale for Definition of Attainment Date
Attachment E: Alternative Attainment Demonstration for Areas Affected by Transport
Attachment F: Framework for Planning--Additional Information
Attachment G: Guidance for Using Modeling and Supporting Analyses to Evaluate Emissions Reductions Strategies

INTRODUCTION

On July 18, 1997, EPA issued revised NAAQS for ozone and PM. For ozone, the NAAQS is now based on an 8-hour averaging period (versus 1 hour for the previous NAAQS), and the level has been changed from 0.12 ppm to 0.08 ppm (62 FR 38856). For the PM NAAQS, EPA has added a new 24-hour and an annual NAAQS for $PM_{2.5}$ (particles with an aerodynamic diameter less

than or equal to a nominal 2.5 micrometers) and revised the form for the pre-existing 24-hour PM_{10} (particles with an aerodynamic diameter less than or equal to a nominal 10 micrometers) NAAQS (62 FR 38652). The EPA did not revise the level of the annual PM_{10} NAAQS but did revise some aspects of the form of the standard (62 FR 38652).
In addition, in the final action for the $PM_{2.5}$ NAAQS, EPA determined that visibility impairment is a $PM_{2.5}$ welfare effect of concern. The EPA concluded that the most appropriate approach for addressing visibility impairment is to establish secondary standards for PM identical to the suite of primary standards in conjunction with a revised visibility protection program to address regional haze in mandatory Class I Federal areas (certain large national parks and wilderness areas). The EPA proposed the regional haze regulations on July 31, 1997 (62 FR 41138). When finalized, these regulations will set up a framework to assure reasonable progress in mandatory Class I Federal areas.

For the revised ozone NAAQS, the guidance covers three areas.

1. A classification scheme. This includes the dates by which designations[2] and classifications will occur, anticipated dates for when nonattainment SIPs are due, and anticipated attainment dates.
2. A policy clarifying the requirement that States adopt reasonably available control requirements and reasonably available control technology (RACM/RACT) into ozone nonattainment area SIPs for the ozone standard.
3. Details on the SIP requirements for ozone nonattainment areas (transitional, traditional and international transport).

For the revised PM_{10} NAAQS, the guidance covers three areas.

1. A classification scheme for the revised PM_{10} NAAQS.
2. The SIP requirements for serious and moderate areas under the revised PM_{10} NAAQS.
3. A clarification of the requirement that States adopt RACM/RACT into PM nonattainment area SIPs.

For the $PM_{2.5}$ NAAQS, because of the longer timeframe for collecting monitoring data, designating nonattainment areas and developing SIPs, the guidance notes where technical and other

[2]For guidance on the designations process, see "Re-issue of the Early Planning Guidance for the Revised Ozone and Particulate Matter (PM) National Ambient Air Quality Standards (NAAQS)," Sally L. Shaver, Director, Air Quality Strategies and Standards Division, June 16, 1998.

guidance is still under development. In certain cases, however, principles relating to implementing the $PM_{2.5}$ NAAQS are provided.

For the $PM_{2.5}$ NAAQS and the regional haze program, the guidance provides placeholders for the additional guidance that EPA plans to issue after final rulemaking on the regional haze rule; that guidance will address inter-program coordination and an update on regional modeling.

For all programs (ozone, PM, and regional haze), the document provides guidance on a framework for planning, including a discussion on the need for regional planning, and the development of a regional air quality planning effort.

REVISED 8-HOUR OZONE NAAQS

1. Classification Scheme
    a. Transitional Areas
    b. Traditional Areas
    c. International Transport Areas

2. RACM/RACT Policy

3. SIP Requirements for Transitional Areas
    a. Qualifications for the Transitional Classification
    b. Emissions Inventory, Modeling and Attainment Demonstration
    c. RACM/RACT
    d. Reasonable Further Progress
    e. Contingency Measures
    f. New Source Review (NSR)
    g. Conformity

4. SIP Requirements for Traditional Areas
    a. Qualifications for the Traditional Classification
    b. Emissions Inventory, Modeling and Attainment Demonstration
    c. RACM/RACT
    d. Reasonable Further Progress
    e. Contingency Measures
    f. NSR
    g. Conformity
    h. [new section since 8/14/98] Credit for National Measures

i. [new section since 8/14/98] Areas Affected by Transport

5. SIP Requirements for International Transport Areas
   a. Qualifications for the International Transport Classification
   b. Emissions Inventory, Modeling and Attainment Demonstration
   c. RACM/RACT
   d. Reasonable Further Progress
   e. Contingency Measures
   f. NSR
   g. Conformity

6. Ozone Transport Region
   [placeholder section]

1. Classification Scheme [Revised from 8/14/98 version]

Areas designated nonattainment for the 8-hour ozone standard will be subject to the planning requirements of subpart 1 of part D of title I of the Act. These provisions grant EPA the authority to create classifications for nonattainment areas (see Attachment C). Under this authority, EPA plans to establish a classification scheme for the 8-hour ozone standard that has three formal classifications: transitional, traditional, and international transport. In this section, dates are provided by which certain activities will occur for these three classifications. Some of those dates are common to two or all three classifications. First, for all three types of areas, final designations and classifications will occur by July 18, 2000. Second, for traditional and international transport areas, nonattainment area SIPs will be due by July 18, 2003.

This section also provides control measure implementation and attainment dates that EPA anticipates establishing for the three types of areas. Specifically, when EPA takes rulemaking action on specific SIPs, EPA will approve dates by which all the control measures in the SIP must be fully implemented in order to ensure attainment of the standard. The implementation dates will also serve as milestones for reasonable further progress (RFP). The EPA will also formally establish attainment dates when EPA takes rulemaking action on the specific SIPs submitted by the States. The attainment dates will generally be set at the end of three ozone seasons after the control measure implementation dates. The formal assignment of attainment dates will be based on EPA's review of the facts and circumstances specific to each nonattainment area and the SIP for the area. A State that needs additional time for its implementation or attainment date beyond those presumed in this guidance should provide EPA with adequate documentation regarding its need for the additional time to enable EPA to

determine the appropriate date. This documentation should address the severity of nonattainment and the availability and feasibility of pollution control measures.

In this document, EPA provides guidance on the requirements for these SIPs. The definition of attainment date is the same for all three classifications of ozone areas.[3] Attainment date is defined as the date by which all monitors in an area must attain the 8-hour ozone standard in accordance with EPA's regulations. The 8-hour standard is met at a monitoring site in the area when the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentration is less than or equal to 0.08 ppm (see 40 CFR 50, Appendix I). An area attains the standard when every monitoring site in the area meets the standard under this definition. To be formally redesignated to attainment, though, the area must also meet certain other Act requirements, including submittal of an air quality maintenance plan. (For a discussion of the rationale for this definition of attainment date, see Attachment D.)

a. Transitional Areas [Revised from 8/14/98 version]

The Presidential Memorandum of July 16, 1997 called for the creation of a transitional classification for certain areas. This classification is available only to areas that have had the 1-hour ozone standard revoked but do not attain the 8-hour ozone standard (see section 3.a.). (Based on air quality data, EPA has determined and will continue to determine through rulemaking which areas have attained the 1-hour standard and will revoke that standard for those areas.) Areas wanting to be transitional must also submit a SIP by 2000. Areas that have had the 1-hour standard revoked but do not attain the 8-hour standard and that elect not to be transitional, or do not qualify for it, will be classified as either traditional or international transport. Areas that wish to be considered as transitional should consult with the appropriate Regional Office as soon as possible.

The transitional classification is the primary element of EPA's flexible implementation approach for ozone. This classification encourages cleaner air sooner, responds to the fact that ozone is a regional as well as a local problem, and eliminates unnecessary planning and regulatory burdens for State and local governments. In transitional areas in the East, few, if any, local control measures will be

[3]EPA anticipates establishing attainment dates after July 18, 2005, which is beyond the base period provided for in the Act (See Attachment C). Section 172(a)(2) of the Act provides that EPA may extend the attainment date to the extent appropriate for up to 10 years from the date of the nonattainment designation, considering certain criteria (i.e., the severity of nonattainment and the availability and feasibility of pollution control measures). Therefore, when EPA assigns attainment dates beyond July 18, 2005, EPA will need to address these criteria. Generally, however, a 3-year attainment period, the lead time for implementation of controls, and continued reductions required under the 1-hour standard will result in dates beyond the 5 year period.

necessary since their ozone problem will be resolved through regional reductions in ozone precursor emissions. The EPA recently issued a call for regional nitrogen oxides (NOx) controls in States that significantly contribute to nonattainment in other States. Under the final NOx SIP call that the EPA Administrator signed in September 1998 (63 FR 57356, October 27, 1998), States will need to adopt regional NOx controls in order to meet the NOx emissions budgets established by the SIP call. The EPA's modeling in support of the SIP call projects that the vast majority of the new 8-hour ozone nonattainment areas will attain through the regional NOx strategy. The EPA believes, therefore, that these areas will not need to adopt additional measures beyond those required in response to the NOx SIP call. In the coming months, EPA will make available a list of those areas projected to attain through the SIP call. In addition, for transitional areas, EPA plans to establish modified new source review and transportation conformity requirements[4] that will enable States to comply with only minor revisions to their existing programs. Also, most transitional areas will be able to rely on EPA regional scale modeling--totally or with additional measures--to demonstrate attainment of the 8-hour ozone standard.

The majority of the candidates for the transitional classification will be areas within the NOx SIP call region (proposed as 22 States plus DC). Such areas that have had the 1-hour standard revoked, but do not attain the 8-hour standard, may want to be classified transitional if they are projected to attain the 8-hour standard as a result of regional NOx reductions. Other candidates for the classification will include areas that have had the 1-hour standard revoked, but do not attain the 8-hour standard, that benefit partially or not at all from the NOx SIP call.

For areas that are projected to attain the 8-hour standard through implementation of the NOx SIP call, the transitional area SIP providing for attainment will primarily be the SIP that States will have to submit in response to the NOx SIP call. The final NOx SIP call requires States to submit their SIP revisions by September 30, 1999. (Other related material and documentation, described below, would be due by May 1, 2000.)

For areas where the NOx SIP call is not projected to be sufficient for attainment of the 8-hour standard or does not apply, the transitional area SIP providing for attainment will consist of two items. First, if the area is subject to the NOx SIP call, then the transitional SIP will incorporate the SIP that the States must submit by September 30, 1999 in response to the NOx SIP call. Second, the State will

[4]To accommodate transitional areas, EPA currently plans (1) to propose modifications to the transportation conformity rule requirements in April 1999 and to finalize those modifications in October 1999; and (2) to propose modifications to the new source review rule requirements in January 1999 and to finalize those requirements by June 1999.

need to submit an attainment SIP by May 1, 2000. (A complete list of transitional area SIP elements is in section 3.a.)

When EPA reviews and approves transitional area SIPs, EPA anticipates that it will establish a date of December 31, 2005 as the attainment date for these areas. To attain by that date, transitional areas would need to implement all control measures needed for attainment by May 1, 2003; the transitional area SIP implementation date will be sufficient for RFP purposes, which is discussed below. For the transitional areas that are projected to attain through the NOx SIP call, the May 1, 2003 SIP implementation date is based on the NOx SIP call implementation date. Under the final NOx SIP call, States will have to implement NOx controls by May 1, 2003 and project achievement of the State NOx budgets by September 30, 2007. Based on this schedule and other available information, EPA, therefore, believes that these areas that are projected to be eligible for the transitional classification can achieve sufficient emissions reductions to attain the standard based on air quality data from the years 2003-2005[5].

For areas within the SIP call region that need additional measures to attain, the attainment date of 2005 is also tied partially to the 2003 compliance date for the NOx SIP call. As provided in the Presidential Memorandum, to be eligible for the benefits of the transitional classification, these areas must implement additional control measures on the same time schedule as the NOx SIP call–a schedule that is sooner than otherwise required under the Act. Thus, these areas can achieve sufficient emissions reductions to attain the standard based on air quality data from the years 2003-2005. For areas outside the SIP call region that have to submit an attainment SIP, the attainment date is similarly based on the May 1, 2003 date for the timing of the SIP call emissions reductions as called for by the President's Memorandum. Therefore, these areas should also be able to demonstrate attainment based on air quality data from the years 2003-2005.

By May 1, 2000, EPA expects to complete rulemaking on the NOx SIP call SIP. By July 18, 2000, for all transitional areas, EPA will simultaneously finalize the nonattainment designation and the determination of whether or not to assign the transitional classification. By December 31, 2000, for transitional areas that are expected to attain through the NOx SIP call, EPA anticipates completing the rulemaking on the documentation a State will need to provide indicating it is basing its attainment

[5]EPA has created a narrow exception to the May 1, 2003 compliance date under the NOx SIP call. In the compliance supplement provisions, EPA recognized that a small percentage of utility sources may need a later compliance date. However, EPA believes that this will not be relevant for purposes of local control measures that areas may adopt for purposes of attaining the NAAQS, and that areas should be able to establish compliance dates no later than May 1 of the first ozone season that will be counted for purposes of demonstrating attainment.

demonstration on the NOx SIP call modeling (see section 3.a.). By the same date, for these areas, EPA also anticipates completing rulemaking on the assignment of an attainment date. By December 31, 2000, for areas that rely partially on the SIP call for attainment, EPA anticipates completing the rulemaking action on the SIP containing additional measures to demonstrate attainment and the assignment of an attainment date. By December 31, 2000, for areas that are outside the SIP call region, EPA anticipates completing the rulemaking action on two items: the attainment SIP, including the measures needed to demonstrate attainment, and the assignment of an attainment date. If EPA ultimately does not approve the transitional SIP for any transitional area, then EPA will withdraw the transitional classification and reclassify the area to traditional or international transport.

b. Traditional Areas [Revised from 8/14/98 version]

Areas that have had the 1-hour standard revoked, but do not attain the 8-hour standard, and either do not qualify for or elect not to pursue the transitional classification, will generally be classified as traditional. An area designated nonattainment for the 8-hour NAAQS where the 1-hour NAAQS has not been revoked will also generally be classified as traditional nonattainment for the 8-hour standard (these areas will be designated as either nonattainment or attainment/unclassifiable for the 1-hour NAAQS). Of these areas, those that are designated nonattainment for the 1-hour standard will have to continue to implement their nonattainment area requirements for that standard.

By July 18, 2000, EPA plans to finalize the nonattainment designation, SIP submission due date and classification for traditional areas. The EPA plans to establish a date that is 3 years from designations, but no later than July 18, 2003, as the submission due date for traditional area SIPs. As discussed below in the RFP section for traditional areas, these areas will need to implement the control measures needed for attainment by certain dates to ensure reasonable progress to attainment.

The EPA anticipates that the attainment dates for traditional areas will be different depending on whether the area is designated nonattainment for only the 8-hour ozone standard or for both the 8- and 1-hour standards. When EPA conducts rulemaking to approve traditional area SIPs within 18 months of submission,[6] EPA anticipates that it will establish the attainment date as no later than December 31, 2007 for traditional areas that have had the 1-hour standard revoked but which are designated nonattainment for the 8-hour standard. For these areas, control measures for the 8-hour standard will need to be implemented by May 1, 2005.

---

[6]Under the Act, the SIP review process can take a maximum of 18 months: 6 months for completeness review and 12 months for review to determine if the SIP is adequate to attain and maintain the standard. Thus, EPA anticipates that SIPs will be approved for traditional areas no later than January 18, 2005 -- 18 months after July 18, 2003, the latest due date for submissions.

For areas designated nonattainment for the 8-hour NAAQS, where the 1-hour NAAQS has not been revoked, the 8-hour standard attainment date that EPA anticipates establishing will depend on the area's status under the 1-hour standard. For such areas designated attainment under the 1-hour standard, EPA anticipates that it will establish an 8-hour standard attainment date of no later than December 31, 2007. For such areas that are designated nonattainment under the 1-hour standard that have a 1-hour standard attainment date of 2003 or earlier, EPA anticipates that it will establish an 8-hour standard attainment date of no later than December 31, 2007.[7] Control measures for the 8-hour standard attainment date will need to be implemented by May 1, 2005. For such areas classified severe-15 under the 1-hour standard (November 15, 2005 attainment date), EPA anticipates that it will establish an 8-hour standard attainment date of no later than December 31, 2009. Control measures for the 8-hour standard for these areas will need to be implemented by May 1, 2007. For such areas classified severe-17 under the 1-hour standard (November 15, 2007 attainment date), EPA anticipates that it will establish an 8-hour standard attainment date of no later than the end of the ozone season in 2010 for the area in question. Control measures for the 8-hour standard for these areas will need to be implemented by May 1, 2008. (The 8-hour standard attainment date for the one area classified extreme for the 1-hour standard is discussed below.)

The rationale for setting an attainment date no later than 2007 for the traditional areas that are nonattainment for only the 8-hour standard is that this date should allow sufficient time for areas to implement control measures by May 1, 2005 after the SIP is due in 2003, and for those emissions reductions to enable areas to produce attainment by end of 2007. The EPA believes 2 years from SIP submittal to the control measure implementation date is sufficient because these areas have solved air quality problems associated with the 1-hour NAAQS and, therefore, only need time to attain the 8-hour NAAQS.

The rationale for setting an attainment date no later than 2007 for the traditional areas that are designated attainment/unclassifiable under the 1-hour NAAQS and the areas that are nonattainment for the 1-hour standard and have attainment dates of 2003 or earlier is similar to the areas that are nonattainment only for the 8-hour standard. The 2007 data should also allow sufficient time for these areas to implement control measures by May 1, 2005 after the SIP is due in 2003, and for those

[7]This category of area will include areas that may receive attainment date extensions under the 1-hour standard in accordance with the rationale provided in the following policy: Memorandum from Richard D. Wilson, Acting Assistant Administrator for Air and Radiation, to Regional Air Division Director, Regions I-X, "Extension of Attainment Dates for Downwind Transport Areas," July 16, 1998. This category also applies to the San Francisco Bay Area, CA, which EPA has redesignated from attainment to nonattainment for the 1-hour ozone NAAQS (63 FR 37258, July 10, 1998). This area has November 15, 2000 as its 1-hour attainment date.

emissions reductions to enable areas to produce attainment by the end of 2007. For these areas, EPA also believes 2 years from SIP submittal to the control measure implementation date is sufficient because these areas should have solved air quality problems associated with the 1-hour NAAQS by 2003 and, therefore, only need time to attain the 8-hour NAAQS.

However, traditional areas designated nonattainment for both standards that have 1-hour standard attainment dates of 2005 or later will need additional time to attain, which is consistent with the implementation timeframes presented in the President's Memorandum. The 2009 and 2010 attainment dates for these areas generally allow additional time after the 1-hour NAAQS attainment dates have passed to implement any additional control measures that are needed for attainment of the 8-hour standard.

While taking this general approach with respect to attainment dates, EPA recognizes that there may be certain cases that present special circumstances that would merit EPA's consideration of its authority to grant the two 1-year extensions provided in section 172(a)(2)(C). In particular, EPA notes that the severe-17 areas and the one extreme area will have attainment dates for the 1-hour standard – for which EPA has historically taken the interpretation that emissions reductions can occur as late as the attainment year – and the 8-hour standard that are substantially similar. Therefore, EPA anticipates that it may consider the availability of the extension provisions in the Act for purposes of determining whether attainment demonstrations for these areas are adequate. For these areas, EPA will also consider the reasonableness of implementation dates beyond May 2008 that could interfere with demonstrating attainment based on air quality data from the years 2008-2010. A determination of whether later implementation dates are reasonable could include consideration of factors such as the cost and technological feasibility of control measures, as well as the timeframes for other control obligations. These areas should work with the appropriate EPA Regional Offices in developing an attainment strategy.

Finally, EPA anticipates establishing attainment dates for severe-17 and extreme areas that could be as late as December 31, 2010. While, technically, these dates would result in an attainment period of approximately 10 years and 6 months – which is 6 months longer than provided in section 172(a)(2) – EPA believes that this minor extension is an appropriate exception. First, many of these areas have ozone seasons that end on September 30. Therefore, for all practical purposes, the extension for many areas will not exceed a few months. Second, and more importantly, EPA believes that it must balance the objectives of Congress by considering the timeframes that Congress intended for attainment of the 1-hour standard and the timeframes Congress specified for purposes of a revised NAAQS, including the 8-hour ozone NAAQS. Congress clearly specified that severe-17 areas and the one extreme area could have as late as November 15, 2007 and 2010, respectively, to meet the 1-hour standard. Based on the promulgation date of the 8-hour standard, section 172(a)(2) contemplates

an attainment date no later that July 18, 2010. Generally, the 8-hour standard is more stringent than the 1-hour standard, and areas will need to implement additional control measures to move from attainment of the 1-hour standard to attainment of the 8-hour standard. Extending the attainment date for the 1-hour standard by a maximum of 6 months is appropriate in order to harmonize the attainment dates for the 1-hour and 8-hour standards and to allow additional time for implementation of measures to attain those standards.

As noted above, the South Coast Air Quality Management District in California--the only area classified extreme for the 1-hour ozone standard--has an attainment date for that standard of November 15, 2010. As also noted above, EPA anticipates setting an attainment date for the 8-hour standard for this area of December 31, 2010. The Presidential Memorandum, however in speaking of areas that were nonattainment for both the 1-hour and 8-hour ozone standards, noted that ". . . for virtually all of these areas no additional local control measures beyond those needed to meet the requirements of Subpart 2 . . . would be required to be implemented prior to their applicable attainment date for the 1-hour standard." Because of the unique nature of the South Coast, this area would seem to be the exception to that direction in the Presidential Memorandum. In light of this situation, EPA has not yet developed a specific approach for setting the implementation date for the South Coast. The South Coast should work with the EPA Region IX office to determine an appropriate implementation date. The EPA will ensure that the implementation date for the 8-hour ozone standard will be harmonized with implementation program for the 1-hour standard.

c. <u>International Transport Areas</u> [Revised since 8/14/98 version]

The Act includes a provision--section 179B--that applies to areas impacted by emissions emanating from outside the United States (U.S.). This provision has been used to allow areas designated under the 1-hour ozone standard to show that their SIPs would be adequate to attain the NAAQS "but for" emissions emanating from outside the U.S. The EPA will continue to use this approach to address areas that are nonattainment for the 8-hour ozone NAAQS that are impacted by international emissions. The difference is that under the 8-hour NAAQS, for areas that meet the statutory criteria, EPA plans to assign a formal international transport classification. The classification will be available for areas that are nonattainment for the 8-hour standard whether or not they are also nonattainment for the 1-hour standard.

By July 18, 2000, EPA plans to finalize the nonattainment designation, SIP submission due date and assignment of the international transport classification for candidate areas. The EPA plans to establish a date that is 3 years from designation, but no later than July 18, 2003, as the due date for international transport area SIPs. If EPA ultimately does not take rulemaking action to approve the SIP

(rulemaking would occur within 18 months after submission), EPA will withdraw the international transport classification and reclassify the area to traditional.

As discussed below in the RFP section for traditional areas, international transport areas will need to implement the control measures needed for attainment ("but for" emissions from outside the U.S.) by certain dates to ensure reasonable progress to attainment. For these areas, the control measures will need to be implemented by May 1, 2005.

For areas classified as international transport, EPA anticipates that it will establish the attainment date as no later than December 31, 2007. For these areas, the rationale for establishing the attainment date is the same rationale described above for establishing the 2007 attainment date for certain types of traditional areas. The year 2007 for these areas should allow sufficient time for them to implement control measures by May 1, 2005 after the SIP is submitted in 2003, and for those emissions reductions to produce three ozone seasons' clean air ("but for" the contribution of international emissions) in the attainment year of 2007. For any of these areas that are also designated nonattainment for the 1-hour standard, EPA has assigned 1-hour NAAQS attainment dates of 1999 or earlier. Therefore, these areas should have fully implemented their measures to attain the 1-hour standard "but for" emissions from outside the U.S. well before a 2007 8-hour standard attainment date.

2. RACM/RACT Policy

Subpart 1 of part D includes general requirements for all designated nonattainment areas, including those designated under new and revised NAAQS. However, nonattainment areas subject to the 1-hour ozone standard are also subject to the requirements of subpart 2 of part D, including its detailed control measure provisions. Since 1990, EPA has issued significant guidance on subpart 2, including its control measure provisions for ozone nonattainment area SIPs. Under subpart 2, for purposes of applying RACT to sources that emit volatile organic compounds (VOC), an ozone precursor, RACT requirements for ozone nonattainment areas apply independently of what emissions reductions are needed to attain the standard. The revised 8-hour ozone standard, though, is governed only by subpart 1, which contains the provisions that must be in nonattainment plans for areas designated nonattainment for the 8-hour standard (see Attachment C). Unlike subpart 2, which contains detailed requirements regarding the adoption of RACT, subpart 1 contains only a general provision which requires that SIPs for nonattainment areas provide for RACM, including RACT. The EPA believes that it has the authority under subpart 1 to apply an interpretation for RACM/RACT for ozone nonattainment areas for the 8-hour NAAQS that is similar to the Agency's policy for pollutants other than ozone. For the 8-hour ozone NAAQS, if the area is able to demonstrate attainment of the standard as expeditiously as practicable with emission control measures in the SIP, then RACM/RACT will be met and additional measures would not be required as being reasonably available. However, if

an 8-hour nonattainment area contains sources subject to a RACT requirement that has been approved into a 1-hour ozone NAAQS SIP, the area cannot remove the RACT requirement without demonstrating under section 110(l) that the revision will not interfere with attainment, RFP or any other applicable requirement of the Act.[8] (Clarification on the application of this policy to transitional and international transport areas is provided below in sections 3 and 5, respectively; see also the Interim Implementation Guidance document for further discussion.[9])

3. SIP Requirements for Transitional Areas

a. Qualifications for the Transitional Classification

(1) Meeting the 1-hour Ozone Standard and Having that Standard Revoked

One of the criteria for receiving the transitional classification is that EPA must have revoked the 1-hour ozone standard based on EPA's determination that the area has air quality meeting the 1-hour standard. On June 5, 1998 (63 FR 31014), EPA revoked the 1-hour ozone standard for most areas. On July 22, 1998 (63 FR 39432), EPA also revoked the 1-hour ozone standard for six additional areas. The EPA will annually revoke the standard on an area-by-area basis for areas that EPA determines have air quality meeting the 1-hour standard. Some areas may not meet this test until the end of 1999 (using 3 years of data from 1997-1999). These areas, therefore, will not know until then if they qualify for the transitional classification. Nevertheless, EPA encourages States that are currently close to meeting the 1-hour standard to consider doing the preparatory work to develop a submittal to obtain the transitional classification if they are able to meet the 1-hour standard by the end of 1999.

(2) SIP Elements for Areas That Have Had the 1-hour Standard Revoked, That Do Not Attain the 8_Hour Standard and That are Projected to Attain the 8_Hour Standard Through the Regional NOx Strategy [Revised from 8/14/98 version]

For these areas, States will need to submit eight SIP elements:

---

[8]In addition, if the RACT requirement was approved into the SIP prior to November 15, 1990, and it applies in an 8-hour nonattainment area, then, to remove the requirement, the State must provide for equivalent or greater emissions reductions (see section 193).

[9]See memorandum "Guidance for Implementing the 1-Hour Ozone and Pre-Existing NAAQS," from Richard D. Wilson, Acting Assistant Administrator for Air and Radiation, to the Regional Administrators, December 29, 1997.

One: The SIP required under the NOx SIP call (due by September 30, 1999).

Two: A SIP submission that includes documentation identifying the NOx SIP call modeling and emissions inventory as the attainment demonstration for the area. To ensure the public has an opportunity to comment on this documentation, it must be subjected to notice and public hearing at the State level, which could be done simultaneously with the SIP call. The attainment demonstration SIP must include the attainment emissions budget for each major emission inventory sector and a vehicle miles traveled (VMT) projection for the on-road portion of the inventory. (Due by May 1, 2000.) (The on-road portion of the emissions budget and the VMT projection will be used for transportation conformity purposes. Details on the budget are provided below in the section on transitional area conformity.)

Three: RACM/RACT (to be addressed by the NOx SIP call, due by September 30, 1999).

Four: RFP (to be addressed by the NOx SIP call, due by September 30, 1999).

Five: Contingency measures (details discussed below) (due by May 1, 2000).

Six: NSR (in accordance with any requirements under forthcoming rulemaking).

Seven: Transportation conformity element--(if the State wants to employ the special transportation conformity provisions for transitional areas)--State election of federal rule applicability prior to EPA approval of State rule (see Transportation Conformity section below for details).

Eight: A commitment to revise the attainment demonstration if the area has 2 unclean years of data following the SIP implementation date (see section, "Supplemental Attainment Planning") (due May 1, 2000).

(3) SIP Elements for Areas That Have Had the 1-hour Standard Revoked, That Do Not Attain the 8_Hour Standard, and for Which the Regional NO_x Strategy Is Either (a)Not Sufficient for Attainment of the 8_Hour Standard or (b) Does Not Apply [Revised from 8/14/98 version]

For these areas, States will need to submit eight SIP elements:

One: The SIP required under the NOx SIP call, if the area is subject to the NOx SIP call (due by September 30, 1999).

Two: A SIP submission that demonstrates attainment and includes adopted measures sufficient for attainment when combined with any regional NOx control measures (where applicable) (due by May 1, 2000). The measures must be implemented on the same schedule as the NOx SIP call measures (by May 1, 2003). The attainment demonstration SIP must include the attainment emissions budget for each major emission inventory sector and a VMT projection for the on-road portion of the inventory. (Due by May 1, 2000.) (The on-road portion of the emissions

budget and the VMT projection will be used for transportation conformity purposes. Details on the budget are provided below in the section on transitional area conformity.)

Three: RACM/RACT (due by May 1, 2000).

Four: RFP, including compliance dates for all control measures needed for attainment no later than May 1, 2003 (due by May 1, 2000).

Five: Contingency measures (due by May 1, 2000).

Six:. NSR (in accordance with any requirements under forthcoming rulemaking).

Seven: Transportation conformity element (if the State wants to employ the special transportation conformity provisions for transitional areas)--State election of Federal rule applicability prior to EPA approval of State rule (see Transportation Conformity section below for details).

Eight: A commitment to revise the attainment demonstration if the area has 2 unclean years of data following the SIP implementation date (see section, "Supplemental Attainment Planning") (due May 1, 2000).

(4) Other Criteria

An area that would achieve the 1-hour standard by 2000 but for emissions from another State would not be eligible for the transitional classification. To qualify for the transitional classification, the Presidential Memorandum calls for areas--regardless of other circumstances--to attain the 1-hour ozone standard. Areas that do not have air quality meeting the 1-hour standard will still be subject to the requirements of subpart 2 of title I, part D, of the Act, including the regular nonattainment new source review and conformity requirements. Therefore, all the benefits for the transitional classification would not be available to such areas. Areas that have air quality meeting the 1-hour standard where EPA revokes that standard, however, will no longer be subject to subpart 2, but only to subpart 1 under the 8-hour NAAQS. Subpart 1 offers much more flexibility for nonattainment area plans than subpart 2.

A State that is covered by the NOx SIP call, but does not submit a control measure SIP in response to the NO_x SIP call, and submits an attainment demonstration and SIP by 2000 that does not rely on the NO_x regional strategy, is not eligible for the transitional area classification. The NOx strategy is meant to benefit many States in the eastern portion of the country. Therefore, States that do not provide for the reductions needed to help downwind areas will not be eligible for the transitional classification and its associated benefits.

b. Emissions Inventory, Modeling and Attainment Demonstration

Section 172(c)(1) of the Act requires each nonattainment area to submit a plan for the implementation of reductions in emissions from existing sources which will provide for attainment of the

NAAQS. Section 172(c)(3) requires a nonattainment plan to include an emissions inventory. Section 172(c)(6) requires the plan to contain emission limits and other measures necessary to provide for attainment of the NAAQS. Development of the plan entails the preparation of emissions inventories and use of a photochemical dispersion model, or equivalent analysis, to identify reductions in those precursor emissions which contribute to the formation and transport of ozone. For many Eastern U.S. areas, the technical support work for the Ozone Transport Assessment Group (OTAG) process included the preparation of emissions inventories and use of a photochemical dispersion model to identify reductions in those precursor emissions which contribute to the formation and transport of ozone; therefore, areas will be able to rely on these analyses in their SIPs.

In general, the emissions projected from application of controls in the attainment demonstration form the basis of the emissions budget that is used for conformity purposes. The emissions budget for the attainment level of emissions must be specified for all major source sectors of the emission inventory as part of the attainment demonstration under section 172(c). The EPA plans to revise the transportation conformity rule to reiterate the budget requirement under section 172. Details of the budget as it pertains to transportation conformity in transitional areas appear below in the discussion concerning transportation conformity.

(1) Areas Projected to Attain Through the NO_x SIP Call [Revised from 8/14/98 version]

Areas that EPA projects will attain the 8-hour standard through the adoption of the NOx SIP call measures are not required to perform additional modeling. This includes areas that are in the OTAG domain, but that are not in the 22-State (plus District of Columbia) region covered by the SIP call, provided the State is implementing the control measures assumed in the model (e.g., the State elements of nationally-applicable control measures such as the low-emission vehicle program). This does not preclude States from electing to do additional modeling. The EPA will make available a list of the areas that are projected to attain the 8-hour standard based on EPA's modeling of the NOx SIP call emissions reductions. These areas will not be required to adopt additional measures beyond those required in response to the NOx SIP call for purposes of their attainment demonstration SIPs.

The EPA's modeling of the NOx SIP call was performed using projections to the year 2007. As stated above, EPA anticipates assigning an attainment date of December 31, 2005, and a SIP implementation date of May 1, 2003, to transitional areas. In conjunction with the list mentioned above, EPA intends to provide an analysis that will show which potential transitional areas are projected to reach attainment levels of emissions by 2003 based on the modeling for 2007. The analysis will also show which areas are not projected to achieve attainment emissions levels by 2003.

The EPA plans to make the NOx SIP call emissions inventories and modeling results available on the EPA Regional Modeling Center Section of the Support Center for Regulatory Air Models (SCRAM), Internet web address (http://www.epa.gov/ttn/scram/regmodcenter/t28.htm). States may incorporate this information into the 8-hour ozone attainment demonstration by downloading information from this location and placing it in their SIP.

(2) Areas where Additional Measures Are Needed for Attainment

(A) Areas in the OTAG Modeling Domain [Revised from 8/14/98 version]

(i) Areas in States that received the SIP call

Because EPA's finer grid modeling and emissions inventories will exist for these areas (i.e., for the NOx SIP call), no additional modeling is required for the attainment demonstration. States may use a demonstration that includes the existing modeling results, data analysis, monitoring data, and other factors. States may use the guidance in Attachment G to determine the level of additional emissions reductions needed. That guidance provides several techniques using the model's predicted change in ozone in response to VOC and NOx controls, and air quality and emissions trends data. Although no additional modeling is required for these areas, if projected air quality concentrations after application of the NOx SIP call controls are much greater than the level of the NAAQS (e.g., greater than or equal to 0.09 ppm), the State should consider additional modeling analyses of controls in its demonstration of attainment. The guidance that no additional modeling is necessary for these areas does not preclude States from electing to do additional modeling if States desire to do so.

(ii) Areas that Did Not Receive the NOx SIP Call (new from 8/14/98 version)

The EPA's modeling and emissions inventories will exist for areas inside the OTAG modeling domain that did not receive the NOx SIP call. States may follow the same streamlined procedures specified above under section (2)(A)(i) to determine the level of additional emissions reductions needed. Because these areas are in the coarse grid portion of EPA's modeling domain, however, EPA's confidence in the modeling results is less than in the finer grid areas. Therefore, if projected air quality concentrations after application of the NOx SIP call controls are much greater than the level of the NAAQS (e.g., greater than or equal to 0.09 ppm), the State must conduct additional modeling analyses of controls in its demonstration of attainment.

(B) Areas Outside the OTAG Modeling Domain [New from 8/14/98 version]

Where modeling results and emissions inventories exist for these areas, States may follow the same streamlined procedures specified above under section (2)(A)(i) to determine the level of emissions reductions needed in their transitional SIPs. If projected air quality concentrations after application of the NOx SIP call controls are much greater than the level of the NAAQS (e.g., greater than or equal to 0.09 ppm), the State must conduct additional modeling analyses of controls in its demonstration of attainment. Where no existing modeling results and emissions inventories are available, new modeling is required.

(C) Certain Interstate Nonattainment Area Circumstances [New from 8/14/98 version]

There are several circumstances that need to be addressed involving nonattainment areas that are located in two or more States (e.g., an interstate nonattainment area):

- An interstate nonattainment area in which EPA's modeling for the NOx SIP call shows that one or more counties in one of the States will reach attainment as a result of the NOx SIP call, but that one or more counties in the other State will not. It is possible that the State that is shown to reach attainment under EPA's modeling may contribute locally to the residual nonattainment problem in the adjacent State. If this is so, the contributing State has responsibilities under section 110(a)(2)(D) of the Act and may, therefore, need to adopt other measures to eliminate its significant contribution to the neighboring State. The two States should reach agreement as to the control strategy needed in the interstate area.

- An interstate nonattainment area in which EPA modeling for the NOx SIP call shows that counties in both States will reach attainment as a result of the NOx SIP call, but one State complies with the NOx SIP call provisions while the other does not. In this case, the State that does not comply is ineligible for the transitional classification, but the State that does comply is eligible. The EPA intends, in this case, to designate the entire interstate area nonattainment, but would classify one State's portion transitional and the other traditional. The State that contains the traditional area would then bear the burden of developing a SIP for submission in July 2003, the attainment demonstration of which would include the adjacent State's portion of the nonattainment area.

- An interstate nonattainment area in which EPA modeling for the NOx SIP call shows that counties in neither State will reach attainment as a result of the NOx SIP call, and both States need additional local measures to demonstrate attainment. Both States comply with the NOx SIP call, but only one State adopts the additional local measures needed for attainment in its State and submits its plan by May 2000, while the other State does not and has residual nonattainment. In this case, EPA would designate the entire interstate area nonattainment, but classify the area that has adopted the necessary measures transitional and the other traditional. The State that contains the traditional area

would then bear the burden of developing a SIP for submission in 2003, the attainment demonstration of which would include the adjacent State's portion of the nonattainment area.

c. RACM/RACT

For areas that are projected to attain the 8-hour ozone NAAQS based on the SIP call, RACM/RACT will be met if the area submits a SIP that EPA approves as providing for attainment. For these areas, the SIP providing for attainment will be the SIP that States submit in response to the SIP call. If the State complies with the NOx SIP call, then EPA would not require other measures as being reasonably available.

For areas that benefit from the SIP call (but need additional local measures) or which are outside the SIP call region, RACM/RACT will be met if the area submits a SIP that EPA approves as providing for attainment. For these areas, the SIP providing for attainment will consist of the SIP elements discussed above in section 3.a. If the area is able to demonstrate attainment of the standard through the SIP, then RACM/RACT will be met and additional measures would not be required as being reasonably available.

d. Reasonable Further Progress

This section provides guidance on implementing the Act's provisions for reasonable further progress in transitional areas. Nonattainment SIPs must provide for RFP, which is defined as annual incremental reductions in emissions of the relevant pollutant or such reductions as may reasonably be required by EPA to ensure attainment of the NAAQS by the attainment date. Table 1 of Attachment A indicates RFP milestone dates. In addition, the guidance below under the section Supplemental Attainment Planning will provide added assurance that any failure to attain the standard by the attainment date will be corrected in an expeditious manner.

(1) Areas Projected to Attain Through the NOx SIP Call

The RFP requirement for these areas can be based on the planning, reporting and emissions reductions requirements for the NOx SIP call. States will be able to rely on reductions achieved to meet the regional NOx SIP call to bring emissions down to levels needed for attainment of the 8-hour ozone NAAQS by the area's attainment date. The date required for implementation of the emissions reductions is May 1, 2003, which is the RFP milestone for the area.

(2) Areas in States That Receive the NOx SIP Call Where Additional Measures Are Needed for Attainment [Revised from 8/14/98 version]

As mentioned above, these areas need to submit a SIP in response to the NOx SIP call and a SIP containing control measures needed for attainment, which are implemented in the same timeframes as specified in the NOx SIP call (by May 1, 2003). For these areas, RFP will be met through the emissions reductions achieved by the NOx SIP call and the additional control measures. The principal test of whether RFP is being made will be whether the area implements the emissions reductions measures in the SIP by May 1, 2003.

(3) Areas in States That Do Not Receive the NOx SIP Call [Revised from 8/14/98 version]

Areas in States not covered by the NOx SIP call are subject to the same planning, rule adoption and implementation schedule as areas that rely totally or partially on the NOx SIP call. As discussed above, the transitional area SIP for these areas must include control measures demonstrated sufficient to achieve attainment of the standard. States will have to implement all of those controls in the timeframes prescribed in the NOx SIP call (i.e., by May 1, 2003). The RFP for these areas will be the emissions reductions achieved by the control measures needed for attainment. The principal test of whether RFP is being made will be whether the area implements the emissions reductions measures in the SIP by the SIP implementation dates described above.

e. Contingency Measures

Section 172(c)(9) requires nonattainment area plans to include contingency measures to apply when areas fail to make RFP or to attain. The Act requirement for these contingency measures is different from the requirement for contingency measures in maintenance plans for areas that attain the NAAQS (section 175A(d)).

In general, EPA will rely on existing policies for requirements concerning the form and content of contingency measures (see the 1992 General Preamble, 57 FR 13498 at 13510 and subsequent policy memoranda[10]). In addition, the guidance below under the section Supplemental Attainment Planning provides added assurance that any failure to attain the standard by the attainment date will be corrected in an expeditious manner.

---

[10]See memorandum of August 23, 1993 from Michael H. Shapiro, Acting Assistant Administrator for Air and Radiation, to Regional Air Division Directors re: "Guidance on Issues Related to 15 Percent Rate-of-Progress Plans" and memorandum of November 8, 1993 from D. Kent Berry, Acting Director, Air Quality Management Division, to Regional Air Division Directors re: "Clarification of Issues Regarding the Contingency Measures that are due November 15, 1993 for Moderate and Above Ozone Nonattainment Areas."

(1) Areas That Have Had the 1-hour Standard Revoked, That Do Not Attain the 8_Hour Standard and That are Projected to Attain the 8_Hour Standard Through the Regional NOx Strategy

For these areas, the Presidential Memorandum states: "Based on the OTAG analyses, areas in the OTAG region that can reach attainment through implementation of the regional transport strategy would not be required to adopt and implement additional local measures." These areas will benefit to varying degrees from the regional strategy; for almost all of these areas, EPA's regional scale modeling predicts they will attain by a "margin of safety." Therefore, EPA believes that additional pre-adopted control requirements that can be subsequently implemented as contingency measures would not be necessary. The SIP should, however, contain an enforceable commitment to analyze the causes of any failure to meet RFP or attain and, depending on the results of the analysis, to adopt additional measures as expeditiously as practicable to achieve attainment without waiting for EPA to call for a SIP revision. This commitment would be triggered by failure to meet RFP or attain.

(2) Areas That Have Had the 1-hour Standard Revoked, That Do Not Attain the 8_Hour Standard, and for Which the Regional NOx Strategy Is Not Sufficient for Attainment of the 8_Hour Standard or Does Not Apply

These areas will have to adopt additional measures in order to demonstrate attainment. The EPA believes that contingency measures for these areas should provide for additional emissions reductions of that ozone precursor (NOx or VOC) that is providing most of the additional emissions reductions beyond the NOx SIP call that are needed for attainment. Those reductions should come from the same general geographical area as most of the additional reductions that are needed for attainment. For these areas, contingency measures will have to be implemented only if the transitional area fails to make RFP or attain the standard by its attainment date.

f. New Source Review

The EPA plans to propose revisions to its NSR rules that would apply to areas that are classified as transitional.[11] These revisions would allow States to meet the statutory NSR requirements with only minor revisions to their existing programs. The EPA has also begun to reexamine the NSR requirements applicable to existing nonattainment areas in order to address issues of fairness among existing and new nonattainment areas.

---

[11]To accommodate transitional areas, EPA currently plans to propose modifications to the new source review rule requirements in January 1999 and to finalize those requirements by June 1999.

g. Conformity

(1) Transportation Conformity [Revised since 8/14/98 version]

In 1998, EPA plans to propose revised rules for conformity that will apply to transitional areas. These revisions will allow States to meet the conformity requirements with only minor revisions to their existing programs. Although those transitional areas that will be newly designated as nonattainment will have to develop a conformity program, the program is expected to be more flexible and less burdensome than programs in areas that are currently nonattainment for the 1-hour ozone standard.

The transitional conformity rule will contain the details of the conformity process and analysis for transitional areas. The EPA intends to create a VMT screening test that would eliminate the need for detailed emissions analysis for many areas (specifically, those areas whose VMT projections are consistent with the SIP and indicate that motor vehicle emissions will not increase over the long term). In addition, EPA intends to propose flexibility to assist areas in demonstrating conformity over the entire 20-year timeframe of the transportation plan.

(A) VMT Projections and Emissions Budgets in Transitional Attainment Demonstrations

In order to implement the transitional area conformity rule, the transitional area SIP will have to contain certain information, as follows. Because the Act's conformity provisions of section 176(c) require transportation plans and programs to be consistent with the SIP's "estimates of emissions from motor vehicles and necessary emissions reductions," it is critical for State and local agencies to be able to identify these emissions estimates (i.e., "budgets"). For transportation conformity purposes, transitional area SIPs must explicitly identify the NOx and VOC motor vehicle emissions budgets and VMT projections from the SIP's attainment inventory. These emissions budgets and VMT projections must be identified in the transitional area SIP, and State and local transportation agencies must be consulted on these emissions budgets and VMT projections before the transitional area SIP is submitted to EPA. Of course, the budgets and projections would not apply for conformity purposes before such areas become subject to conformity for the 8-hour standard.

For transitional areas that are not relying exclusively on the NOx SIP call, the motor vehicle emissions budgets would be the SIP's post-control NOx and VOC emissions inventories for on-road mobile sources for the SIP's attainment year.

For transitional areas relying on EPA's NOx SIP call modeling, the motor vehicle emissions budgets would be the SIP's post-control NOx and VOC emissions inventories for on-road mobile

sources for the modeled year 2007.[12] The EPA will identify, from the modeling effort, county-by-county motor vehicle emissions and VMT projections for the post-control situation. The EPA will then make this information available electronically for States to use in developing their transitional area SIPs and for purposes of identifying their transportation conformity budgets. (See the following Internet web site: http://www.epa.gov/ttn/oarpg/otagsip.html .) The projected emissions estimates in the NOx SIP call modeling account for growth of the various source sectors, including the on-road mobile sector. The post-control emissions inventory also reflects the controls that EPA assumed in its modeling for the NOx SIP call.

It should be noted that emissions used in the modeling input vary by hour depending on temperature and are, therefore, applicable to specific days in the four episodes being modeled. Thus, the EPA will make available a "seasonal" and typical summer day mobile emissions inventory that assumes the same controls that were assumed in development of the modeling inventory used in the modeling of the final NOx SIP call statewide NOx budgets. This will include VMT and will be available on a county basis and would be appropriate to use for the transportation conformity budgets. As provided in the existing transportation conformity rule, areas could choose to sum the information from individual counties in order to establish budgets that cover the entire nonattainment area, or they could establish subregional budgets on a multi-county or other basis.

The inventories used in the NOx SIP call modeling are developed from sector-specific data and sub-State area information. The original inventories were developed under the 37-State OTAG process and were widely reviewed as part of that process. The EPA anticipates, in the final modeling of the NOx SIP call budgets, that the emissions inventory will reflect revisions from the OTAG inventory to incorporate actual 1995 VMT (consistent with EPA's trends inventory[13]) and comments received on the proposed rulemaking.

---

[12]The original projected emissions inventory for the modeling done under OTAG was for 2007 (the latest statutory attainment date of the 1-hour NAAQS nonattainment areas in the modeling domain). In EPA's modeling of the NOx SIP call emissions reductions, EPA has continued to use projections to 2007. As noted in the discussion of section 3.b. on transitional area attainment demonstrations, the modeling for 2007 can serve as the basis of the attainment demonstration for areas projected to attain through the NOx SIP call for a transitional area's SIP implementation date (anticipated to be May 1, 2003).

[13]See "National Air Pollutant Emission Trends Database," EPA/454/R-97-011, December 1997.

Transitional areas that rely on EPA's NOx SIP call modeling as their attainment demonstration may modify the motor vehicle emissions budgets and VMT projections identified by EPA for inclusion in the SIP. However, the SIP would then need to demonstrate that the VMT and motor vehicle emissions budgets identified for conformity purposes would still result in attainment and the statewide NOx budget would still be met.[14]

States should be advised that if their control strategy to comply with the NOx SIP call is different than that assumed by EPA in its NOx SIP call modeling, then they need to modify the motor vehicle emissions budget that EPA provides to them. The budgets that EPA will be providing electronically, based on the NOx SIP call modeling (as described above), assume a certain set of control strategies and allocation of emissions reductions among source categories. If a State chooses a different set of control strategies, then its motor vehicle emissions inventory for the modeled year will be different than the inventory EPA assumed. To avoid problems with demonstrating conformity in the future, the State needs to ensure that the motor vehicle emissions budget identified for conformity purposes is the level of motor vehicle emissions that the State predicts will actually occur given its control measures.

Similarly, for areas that need other controls in addition to the NOx SIP call to attain, the emissions reductions contained in the transitional area SIP will go beyond those addressed in EPA's NOx SIP call modeling. Therefore, these areas will not be relying totally (or at all) on the budgets and VMT projections identified by EPA. Instead, these areas will need to identify the motor vehicle emissions budgets and VMT projections that reflect the additional controls needed to demonstrate attainment in the transitional area SIP.

Areas may choose to adjust the geographic coverage of the motor vehicle emissions budget identified by EPA. For example, if the metropolitan planning organization (MPO) boundary extends somewhat beyond the anticipated nonattainment area boundaries, the area may decide, after consultation with the State and local transportation agencies, that it is more convenient to establish a motor vehicle emissions budget for conformity purposes that applies to the entire MPO area. If the transitional area specifies this intent in its SIP, future transportation conformity analyses would need to include motor vehicle emissions from the entire MPO area. Because the Act requires conformity in nonattainment areas, it will not be possible for areas to decrease the coverage of the motor vehicle emissions budget to an area smaller than the nonattainment area.

(B) Transportation Conformity SIPs [New from 8/14/98 version]

---

[14]Requirements for demonstrating that the statewide NOx emissions budget is met appear in the final NOx SIP call.

The transitional conformity rule will require transitional areas to submit transportation conformity SIPs within 12 months of their designation as nonattainment for the 8-hour standard. Transportation conformity SIPs implement the Federal conformity provisions as a matter of State law.

For many States, EPA may have already approved a conformity SIP under the 1-hour ozone standard. Ordinarily, an approved conformity SIP continues to apply until revisions have been submitted to EPA, and EPA has approved them. However, EPA expects that transitional areas will want to use the flexibilities established in the Federal transitional rule as soon as possible, even before their transitional conformity SIPs have been submitted and approved. In order to ensure that the transitional conformity rule applies instead of any previously approved transportation conformity SIP, the transitional SIP that is submitted prior to designation (i.e., by May 1, 2000) should include language such as the following:

> Until EPA has approved a conformity SIP that specifically applies to transitional ozone areas, the Federal transitional conformity rule will apply for conformity determinations in transitional ozone areas in [insert name of area or state], notwithstanding any previously approved conformity SIP.

States whose conformity SIP has not yet been approved by EPA may choose to include this language in the applicability section of the traditional conformity SIP.

(2) General Conformity

The EPA is in the beginning stages of revising its rule on general conformity for all areas. As part of this effort, EPA will evaluate whether any special provisions are appropriate for transitional areas. It is premature at this time, however, to speculate how the revised rule would impact Federal projects (other than those covered by the transportation conformity rule) in transitional areas.

4. SIP Requirements for Traditional Areas

a. Qualifications for the Traditional Classification [Revised from 8/14/98 version]

No special qualifications are required for an area to be classified traditional. If an area elects not to pursue the transitional classification (or does not qualify for that classification) and is not an international transport area, then EPA will classify the area traditional. Areas that are nonattainment for only the 8-hour NAAQS and areas that are nonattainment for the 8-hour NAAQS where the 1-hour NAAQS has not been revoked can be classified traditional. In addition to the SIP requirements

discussed in this section, areas that are designated nonattainment for the 1- and 8-hour NAAQS still need to comply with the subpart 2 requirements associated with the 1-hour NAAQS, as explained in EPA guidance.[15]

b. Emissions Inventory, Modeling and Attainment Demonstration [New from 8/14/98 version]

Section 172(c)(1) of the Act requires each nonattainment area to submit a plan for the implementation of reductions in emissions from existing sources which will provide for attainment of the NAAQS. Section 172(c)(3) requires the nonattainment plan to include an emissions inventory. Section 172(c)(6) requires the plan to contain emission limits and other measures necessary to provide for attainment of the NAAQS. Development of the plan entails the preparation of emissions inventories and use of a photochemical dispersion model, or equivalent analysis, to identify reductions in those precursor emissions that contribute to the formation and transport of ozone. In general, the emissions projected from application of controls in the attainment demonstration form the basis of the emissions budget that is used for conformity purposes. The emissions budget for the attainment level of emissions must be specified for all major source sectors of the emissions inventory as part of the attainment demonstration under section 172(c). The EPA plans to revise the transportation conformity rule to reiterate the budget requirement under section 172.

The emissions inventory, modeling and attainment demonstration requirements applicable to a particular traditional nonattainment area will depend on whether EPA modeling is available in support of the NOx SIP call, and whether that modeling demonstrates that the particular area will attain the 8-hour NAAQS as a result of the regional NOx emission controls.

(1) Areas Projected by EPA Modeling to Attain Through the NOx SIP Call

Areas classified traditional that EPA projects will attain the 8-hour standard through the adoption of the NOx SIP call measures are not required to perform additional modeling. This includes areas that are in the OTAG domain, but that are not part of the SIP call, provided the State is implementing the control measures assumed in the model (e.g., the State elements of nationally-applicable control measures such as the low-emission vehicle program). This does not preclude States from electing to do additional modeling. The EPA will make available a list of the areas that are projected to attain the 8-hour standard based on EPA's modeling of the NOx emissions reductions

[15]See memorandum "Guidance for Implementing the 1-Hour Ozone and Pre-Existing NAAQS," from Richard D. Wilson, Acting Assistant Administrator for Air and Radiation, to the Regional Administrators, December 29, 1997.

after the final NOx SIP call is published. These areas will not be required to adopt additional measures beyond those required in response to the NOx SIP call. However, for these areas, the State should, at the time it prepares its SIP submission to EPA, evaluate whether the EPA modeling assumptions still reflect current and projected conditions; where the modeling assumptions are incompatible with current and anticipated conditions, the State should undertake other corroborating analyses to ensure that the demonstration of attainment accounts for the current and projected conditions.

It should be noted that EPA's modeling of the NOx SIP call was performed using projections to the year 2007. The EPA intends to provide an analysis that will show which areas are projected to reach attainment levels of emissions by 2003 based on the modeling for 2007.

The EPA plans to make the NOx SIP call emissions inventories and modeling results available on the EPA Regional Modeling Center Section of the Support Center for Regulatory Air Models (SCRAM), Internet web address (http://www.epa.gov/ttn/scram/regmodcenter/t28.htm). States may incorporate this information into the 8-hour ozone attainment demonstration by downloading the information from this location and placing it in their SIPs.

(2) Other Areas

These areas will require a new emissions inventory and a modeling and attainment demonstration. Guidance on the development and use of emissions inventories in the attainment demonstration is found in the following guidance, "Emissions Inventory Guidance for Implementation of the Ozone and Particulate Matter National Ambient Air Quality Standards (NAAQS) and Regional Haze Regulations." [Note: this document is a draft available for public comment and can be obtained from the following Internet site: http://ttnwww.rtpnc.epa.gov/implement/actions.htm .] That guidance document recommends the use of a 1999 base year emission inventory for attainment demonstration purposes. That guidance supplements the anticipated proposed Consolidated Emissions Reporting Rule (and, in fact, includes a copy of the draft proposal for reference).

Guidance on the modeling and attainment demonstration is found in the following guidance "Use of Models and Other Analyses in Attainment Demonstrations for the 8-Hour Ozone NAAQS." [Note: this document is a draft available for public comment and can be obtained from the following Internet site: http://ttnwww.rtpnc.epa.gov/implement/actions.htm .] The attainment demonstration must provide that emissions reductions needed for attainment occur by the SIP implementation date discussed above. Compliance with the emissions reductions by the required SIP implementation date is designed to provide three ozone seasons of ozone concentrations such that the NAAQS will be attained by the attainment date. For the modeled attainment demonstration, this means that the future modeled emissions must be for the SIP implementation year. The SIP must also ensure that emissions changes

between the SIP implementation date and the attainment date are consistent with providing an attainment level of emissions by the attainment date.

It should also be noted that for transportation conformity purposes, the SIP needs to explicitly identify the motor vehicle emissions budgets. See the transportation conformity rule for definitions and explanation of motor vehicle emissions budgets.

c. RACM/RACT

The RACM/RACT requirement applies to traditional areas, as described above in section 2. The application of the policy to traditional areas does not raise any specific issues.

d. Reasonable Further Progress [Revised from 8/14/98 version]

This section provides guidance on implementing the Act's provisions for RFP in traditional areas. Reasonable further progress for traditional areas that are nonattainment for only the 8-hour NAAQS is defined as the emissions reductions an area needs in order to come into attainment with the 8-hour NAAQS in accordance with the identified SIP implementation dates. Reasonable further progress for traditional areas that are nonattainment for the 8-hour NAAQS where the 1-hour standard has not been revoked is defined as any emissions reductions an area needs to come into attainment with the 1- and 8-hour NAAQS in accordance with the 1-hour NAAQS milestones and the SIP implementation dates for the 8-hour standard. The discussion below explains how States will need to test whether those emissions reductions occur. Table 1 of Attachment A outlines the RFP milestones (implementation dates).

(1) Areas That Are Nonattainment for Only the 8_Hour NAAQS

To ensure reasonable progress toward attainment of the 8-hour standard by the attainment date, the SIP for the area must show implementation of all the control measures needed for attainment by no later than May 1, 2005. Because States will need to submit their SIPs for these areas by July 18, 2003, EPA believes that, in most cases, a May 1, 2005 implementation date for RFP purposes provides for reasonable further progress under section 172(c)(2) that will result in attainment by December 31, 2007.

(2) Areas That Are Nonattainment for Both the 1- and 8_Hour NAAQS

For these areas, until the attainment date for the 1-hour standard, RFP for the 8-hour standard can be met by meeting the RFP requirements required under subpart 2 for the 1-hour standard.

In addition, between the 1-hour and 8-hour attainment dates these areas must also demonstrate reasonable progress toward attainment of the 8-hour standard by implementing all the control measures needed for attainment by certain dates. The implementation schedule for the 8-hour standard must be contained in the SIP. For areas that have 1-hour NAAQS attainment dates in or before 2003, control measures needed for attainment of the 8-hour standard will need to be implemented by May 1, 2005. For areas classified severe-15 under the 1-hour NAAQS, the control measures for the 8-hour standard must be implemented no later than May 1, 2007. For areas classified severe-17 under the 1-hour NAAQS, the control measures for the 8-hour standard must be implemented no later than May 1, 2008. For the area classified extreme under the 1-hour NAAQS, EPA has not yet determined an approach for setting the implementation date, but is entertaining comment on three options discussed previously in this document (section 1. b. above).

e. Contingency Measures [New from 8/14/98 version]

Section 172(c)(9) requires nonattainment area plans to include contingency measures to apply when areas fail to make RFP or to attain. The Act requirement for these contingency measures is different from the requirement for contingency measures in maintenance plans for areas that attain the NAAQS (section 175A(d)). In general, EPA will rely on existing policies for requirements concerning the form and content of contingency measures .

Traditional ozone nonattainment areas will have to adopt measures that control precursors of ozone in order to demonstrate attainment. The EPA believes that contingency measures for these areas should provide for additional emissions reductions of that ozone precursor (NOx or VOC) that is providing most of the additional emissions reductions beyond the NOx SIP call that are needed for attainment. Those reductions should come from the same general geographical area as most of the additional reductions that are needed for attainment. For these areas, contingency measures will have to be implemented if the area fails to make RFP or to attain the standard by its attainment date.

In addition, the guidance below under the section Supplemental Attainment Planning will provide added assurance that any failure to attain the standard by the attainment date will be corrected in an expeditious manner.

f. NSR [Revised from 8/14/98 version]

Traditional areas will need to implement the nonattainment NSR program. The NSR program is governed solely by section 173 of the Act (part D, subpart 1) for areas-- (1) designated nonattainment for the 8-hour ozone NAAQS, (2) for which the 1-hour NAAQS has been revoked, and (3) classified "traditional." For these areas, the more specific offset ratios and major source

thresholds provided in subpart 2 are inapplicable. The EPA plans to issue proposed rulemaking shortly under 40 CFR parts 51 and 52 that will also address the NSR rules applicable to these areas, including offset ratios and the major stationary source definition.

g. Conformity [Only slightly edited from 8/14/98 version]

As explained in Attachment C, section 176(c) provides the framework for ensuring that Federal actions conform to air quality plans under section 110 of the Act. Traditional areas will be required to implement the regular conformity program contained in EPA's conformity rules for general and transportation conformity, pursuant to section 176(c). The EPA has issued rules for general and transportation conformity for States to implement those programs. The general conformity rule was issued on November 30, 1993 (58 FR 63214), and the transportation conformity rule was issued on November 24, 1993 (58 FR 62188) and amended most recently on August 15, 1997 (62 FR 43780). These rules require SIPs for nonattainment areas to include conformity programs.

h. Credit for National Measures [New section from 8/14/98 version]

The EPA plans to propose new motor vehicle emissions standards (Tier 2) and sulfur-in-gasoline requirements under title II of the Act. The EPA plans to propose the new rules in early 1999 and publish them in final form in December 1999. Applicability schedules are expected to be presented in the proposed rule. The new controls would be incorporated into the MOBILE6 model that would become available in time for States to use in developing their traditional area ozone SIPs, due for submission by July 2003. Thus, States would be able to take emissions reductions credit for these programs in their SIPs as they use MOBILE6 to project emissions for modeling and attainment demonstrations.

Guidance on credit for any other new national measures will be developed at the time the new measures are issued.

i. Areas Affected By Transport [New section from 8/14/98 version]

Many traditional areas are impacted by transport of ozone and its precursors, which may affect the areas' ability to attain the revised ozone standard. Under the 1-hour standard, EPA recognized the issue of aligning attainment dates when it issued an "overwhelming transport policy."[16] The policy was

[16]See memorandum "Ozone Attainment Dates for Areas Affected by Overwhelming Transport," from Mary D. Nichols, Assistant Administrator for Air and Radiation to the Regional Division Directors, September 1, 1994.

developed for the 1-hour standard but the concern about transport and the impact it can have on an area's ability to attain is equally valid for the 8-hour standard. The section Framework for Planning below contains guidance on harmonizing attainment dates, the attainment demonstration, and other aspects of SIP planning for such situations.

5. SIP Requirements for International Transport Areas

a. Qualifications for the International Transport Classification [Revised from 8/14/98 version]

As explained above in section 1.c., certain areas impacted by international emissions can be classified as international transport. Areas that are nonattainment for only the 8-hour NAAQS and areas that are nonattainment for both the 1- and 8-hour NAAQS can be classified international transport. In addition to the SIP requirements discussed in this section, areas that are nonattainment for both the 1- and 8-hour NAAQS still need to comply with the subpart 2 requirements associated with the 1-hour NAAQS, as explained in EPA guidance.[17]

b. Emissions Inventory, Modeling and Attainment Demonstration [New from 8/14/98 version]

These areas have to demonstrate attainment "but for" international emissions. To perform these "but for" demonstrations, States should follow the modeling procedures discussed above for traditional areas, in consultation with EPA's Regional Offices. The consultation should allow for development of area-specific SIP protocols based on State-Regional Office negotiation to address issues specific to the area.

c. RACM/RACT

For international areas, the RACM/RACT requirement of subpart 1 will be met if the area adequately demonstrates attainment "but for" the international emissions impacting the area. If the area is able to demonstrate attainment of the standard in this manner through a SIP, then RACM/RACT will be met and additional measures would not be required as being reasonably available.

d. Reasonable Further Progress [New from 8/14/98 version]

---

[17]See memorandum "Guidance for Implementing the 1-Hour Ozone and Pre-Existing PM_{10} NAAQS," from Richard D. Wilson, Acting Assistant Administrator for Air and Radiation, to the Regional Administrators, December 29, 1997.

States should follow the RFP guidance discussed above for traditional areas in consultation with EPA's Regional Offices.

e. Contingency Measures [New from 8/14/98 version]

States should follow the contingency measure guidance discussed above for traditional areas in consultation with EPA's Regional Offices.

f. NSR [Revised from 8/14/98 version]

International transport areas should address this requirement in the same manner as traditional areas (see section 4.f.).

g. Conformity [Only slightly edited from 8/14/98 version]

International transport areas should address this requirement in the same manner as traditional areas (see section 4.g.).

6. Ozone Transport Region

[placeholder section]

REVISED PM NAAQS

1. Classification Scheme
    a. PM_{10} NAAQS
        (1) Moderate Areas
        (2) Serious Areas
    b. $PM_{2.5}$ NAAQS

2. RACM/RACT Policy
    a. PM_{10} NAAQS
    b. $PM_{2.5}$ NAAQS

3. SIP Requirements for PM_{10} Areas
    a. Moderate Areas

(1) Qualifications for the Moderate Classification
(2) Emissions Inventory, Modeling and Attainment Demonstration
(3) RACM/RACT
(4) Reasonable Further Progress
(5) Contingency Measures
(6) NSR
(7)Conformity

b. Serious Areas
(1) Qualifications for the Serious Classification
(2) Emissions Inventory, Modeling and Attainment Demonstration
(3) BACM/BACT
(4) Reasonable Further Progress
(5) Contingency Measures
(6) NSR
(7)Conformity

4. SIP Requirements for $PM_{2.5}$ Areas
a. Qualifications for Classification
b. Emissions Inventory, Modeling and Attainment Demonstration
c. RACM/RACT
d. Reasonable Further Progress
e. Contingency Measures
f. NSR
g. Conformity
h. $PM_{2.5}$ Areas Affected by Transport [New section from 8/14/98 version]

This portion of the guidance discusses issues related to both the PM_{10} and the $PM_{2.5}$ NAAQS. As indicated in the Presidential Memorandum, by July 2002, the Agency will determine, based on data available from its review, whether to revise or maintain the $PM_{2.5}$ standards. This determination will occur before areas are designated nonattainment under the $PM_{2.5}$ standards, and before new controls related to the $PM_{2.5}$ standards are imposed. Any guidance provided in this document related to the $PM_{2.5}$ standards is preliminary thinking intended to inform States of what provisions of the Act will govern $PM_{2.5}$ implementation (i.e., subpart 1 of part D of title I), and of what principles EPA believes will guide $PM_{2.5}$ SIP development. The guidance is not intended to suggest in any way that control measures will be required prior to the timeframes laid out in the memorandum.

The EPA interprets the Act to provide that detailed provisions of subpart 4 of part D apply to the PM_{10} NAAQS (this includes the pre-existing and the revised PM_{10} NAAQS). Thus, the

provisions of subpart 4 would not govern the implementation of the $PM_{2.5}$ NAAQS. Instead, the general planning requirements of part A of title I, and the nonattainment planning requirements of subpart 1 of part D of title I, govern the implementation of the new $PM_{2.5}$ NAAQS. The following guidance applies to the implementation of both the PM_{10} and the $PM_{2.5}$ NAAQS.

States with areas that are not attaining the pre-existing PM_{10} standards still have a continuing responsibility under the Clean Air Act. Such States should refer to previously issued EPA guidance[18] and EPA's forthcoming rulemaking under section 172(e) of the Act for information on the planning and control requirements that continue to apply in these areas.

1. Classification Scheme

a. PM_{10} NAAQS

For the revised PM_{10} standard, section 188 of the Act identifies two classifications, moderate and serious, for areas which do not meet the revised PM_{10} NAAQS and which are designated as nonattainment for that NAAQS.

(1) Moderate Areas

Once an area is designated nonattainment for PM_{10}, section 188 outlines the process for classification of the area and establishes the area's attainment date. The EPA expects to designate areas for PM_{10} by July 18, 2000. In accordance with section 188(a) of the Act, all areas designated as nonattainment for PM_{10} are classified as moderate. Pursuant to section 189(a)(1), each affected State will be required to submit to EPA a moderate area SIP, no later than 18 months after designation of the area as nonattainment (no later than January 18, 2002), that contain an NSR permit program, an attainment demonstration and RACM/RACT. (For a complete list of all the required SIP elements, see section 3.a. below.)

Each moderate areas must attain as expeditiously as practicable, but in no case later than the end of the 6th calendar year after designation, pursuant to section 188(c)(1). Therefore, the attainment date for initial nonattainment areas for the revised PM_{10} NAAQS will be as expeditiously as practicable but no later than December 31, 2006. If an area meets the requirements of section 188(d), it may apply and receive up to two 1-year extensions of the attainment date for the area. The two

[18]See memorandum "Guidance for Implementing the 1-Hour Ozone and Pre-Existing NAAQS," from Richard D. Wilson, Acting Assistant Administrator for Air and Radiation, to the Regional Administrators, December 29, 1997.

requirements that a State must meet, pursuant to section 188(d), in order to be granted an extension of the attainment date are:

- the State must demonstrate that it is complying with all requirements that pertain to the area in the applicable SIP (the applicable SIP is the federally-approved PM SIP for the nonattainment area), and
- in accordance with EPA guidance, the area must have no more than a minimal number of exceedances of the standard in the area in the year preceding the extension year.

In order to meet the latter requirement for the revised PM_{10} NAAQS, EPA has determined that a State must show that the 99th percentile PM_{10} concentration in the area is less than 155μg/m^3. In order for a State to be granted each of the 1-year extensions of the attainment date, the State must demonstrate that it is implementing all requirements that pertain to the applicable SIP; in order to receive the first 1-year extension, it must show that the 99th percentile PM_{10} concentration for the attainment year is less than 155 μg/m^3, and for the second 1-year extension the average of the 99th percentile PM_{10} concentration, from the attainment year and the extension year, is less than 155μg/m^3. If the area does not meet the requirements for an extension under section 188(d), it must be reclassified as serious for failure to attain by the attainment date (section 188(b)(2)).

(b) Serious Areas

Section 188(b) provides for serious PM_{10} nonattainment areas. Under that section, a moderate PM_{10} area can subsequently be reclassified as serious before the applicable attainment date if EPA makes a determination that the area cannot practicably attain the PM_{10} standard before its attainment date (section 188(b)(1)). As indicated in the moderate area discussion above, moderate areas can also be reclassified if, following the passage of the attainment date, EPA determines that the area has failed to attain and does not qualify for an attainment date extension pursuant to section 188(d) of the Act (section 188(b)(2)). Pursuant to section 189(b), serious areas reclassified for failure to practicably attain must submit a SIP containing best available control measures/best available control technology (BACM/BACT) within 18 months of reclassification, and a SIP containing an attainment demonstration within 4 years of reclassification. (For a complete list of all the required SIP elements, see section 3.b. below.)

For PM_{10} areas reclassified as serious, the attainment date shall be as expeditiously as practicable, but no later than the end of the 10th calendar year after the date that the area was designated as nonattainment. In this case, for areas which are designated by July 18, 2000, if EPA makes a determination that an area cannot practicably attain before the December 31, 2006 attainment date, or if the area fails to attain by that date, the area will be required to attain on or before December

31, 2010. A State may apply for a 5-year attainment date extension for an area which fails to attain the NAAQS by the serious area attainment date if the area meets the requirements for extensions provided in section 188(e) and in EPA guidance.

b. $PM_{2.5}$ NAAQS

As discussed in the President's Memorandum, $PM_{2.5}$ air quality monitoring data and other technical information need to be gathered before attainment and nonattainment designations can be made for the $PM_{2.5}$ NAAQS. Before this information is available, determining what nonattainment area classifications will be needed is also premature. However, if the $PM_{2.5}$ NAAQS program is regional in nature like ozone, then, similar to ozone, EPA believes that classifications need to be kept to a minimum, and that a classification scheme similar to that being established for ozone could be appropriate for $PM_{2.5}$ nonattainment areas. As air quality and other information become available, EPA will evaluate them and issue guidance accordingly on $PM_{2.5}$ classifications, before designations are made so that States know what classification options EPA plans to establish when the Agency designates and classifies areas for the $PM_{2.5}$ NAAQS.

2. RACM/RACT Policy

a. PM_{10} NAAQS

The EPA's RACM/RACT policy for the revised PM_{10} NAAQS is the same policy that applied to the pre-existing PM_{10} NAAQS. The policy and related guidance are provided in the 1992 General Preamble (57 FR 13498) and in supplemental information (57 FR 18070, April 28, 1992). Generally, EPA recommends that available control measures (including available control technology) be applied to those existing sources in the nonattainment area that are reasonable to control in light of the attainment needs of the area and the feasibility of such controls.

b. $PM_{2.5}$ NAAQS

Similar to the ozone NAAQS, subpart 1 will govern implementation of the $PM_{2.5}$ NAAQS in $PM_{2.5}$ nonattainment areas. Therefore, it is reasonable to expect that the RACM/RACT approach for the $PM_{2.5}$ NAAQS will be similar to the general approach for the ozone 8-hour NAAQS and the PM_{10} NAAQS. Under the approach, RACM/RACT are based on measures that are needed for attainment and not on specific source control measures mandated under the Act. It is also possible that some areas may be nonattainment for both the PM_{10} and the $PM_{2.5}$ NAAQS, such that the RACM/RACT approach may be the same. Once additional information becomes available, including $PM_{2.5}$ monitoring data, EPA will provide further guidance. As mentioned above, consistent with the Presidential

Memorandum, EPA will not be requiring control measures until after the $PM_{2.5}$ standards are reviewed and EPA makes $PM_{2.5}$ nonattainment area designations.

3. SIP Requirements for PM_{10} Areas

Section 188 is located in subpart 4 of the Act, which governs the specific nonattainment requirements for the implementation of the pre-existing and revised PM_{10} standards. The EPA provided guidance concerning SIP requirements for moderate areas under the pre-existing PM_{10} NAAQS in the 1992 General Preamble. On August 16, 1994, EPA issued an addendum to the 1992 General Preamble that addresses requirements for serious areas under the pre-existing PM_{10} NAAQS (59 FR 41998). The guidance in both of these documents also applies to moderate and serious areas designated nonattainment under the revised PM_{10} standards.

a. Moderate Areas

(1) Qualifications for the Moderate Classification

As indicated above, all areas designated nonattainment by July 18, 2000 for the revised PM_{10} NAAQS will initially be classified as moderate.

(2) Emissions Inventory, Modeling and Attainment Demonstration

In accordance with section 189(a)(1), States will be required to submit to EPA their moderate area SIPs that contain attainment demonstrations no later than 18 months after designation of the areas as nonattainment (no later than January 18, 2002). The demonstration (including air quality modeling consistent with EPA modeling guidelines and policies) must provide for attainment by the applicable attainment date for the area; or alternatively, a demonstration that attainment by the applicable attainment date is impracticable.[19]

---

[19]Under section 179B, SIPs for moderate nonattainment areas under the pre-existing PM_{10} NAAQS that are affected by emissions from outside the U.S. can submit a modified demonstration under certain circumstances. Specifically, EPA must approve SIPs for such areas provided (1) the plan meets all applicable Act requirements (including, for example, RACM/RACT), other than a requirement that such a plan or revision demonstrates attainment of the PM_{10} NAAQS by the attainment date, and (2) the SIP demonstrates that the area would attain by that date but for the emissions emanating from outside the U.S. (1992 General Preamble, 57 FR 13498 at 13545). This approach also applies to areas under both the revised PM_{10} NAAQS and the $PM_{2.5}$ NAAQS.

(3) RACM/RACT

In accordance with section 189(a)(1), States will be required to submit to EPA their moderate area SIPs, no later than 18 months after designation of the areas as nonattainment (no later than January 18, 2002), that must include provisions to assure that RACM/RACT for PM_{10} are implemented no later than 4 years after the applicable designation date for the area. Areas designated by July 18, 2000 will be required to implement control measures in the SIPs by July 18, 2004. As indicated above, EPA's RACM/RACT policy for the revised PM_{10} NAAQS is the same policy that applied to the pre-existing PM_{10} NAAQS (1992 General Preamble (57 FR 13498)).

(4) Reasonable Further Progress

In accordance with section 189(c), the PM_{10} nonattainment area SIPs must also contain quantitative emissions reductions milestones which must be achieved every 3 years and which demonstrate RFP, as defined in section 171 of the Act, until the area is redesignated to attainment. The EPA believes that it is reasonable to key the submittal of the milestones with the date for submission of the SIP containing the control measures because these measures will give rise to the primary emissions reductions leading to attainment. Therefore, in this case, the submittal of the milestones will be keyed to the attainment SIP for the area which will be due by January 18, 2002. The next milestone for the area will, therefore, be due on or before January 18, 2005. In addition, within 90 days of the milestone due date, States must submit a demonstration that all measures in the plan have been implemented and that the milestone has been met. The EPA must then determine within 90 days whether or not the State's demonstration is adequate. If a State fails to submit a milestone within the required period or if EPA determines that an area has not met any applicable milestone, then, within 9 months after the failure or determination, the State must submit a plan revision that assures the State will achieve the next milestone (or attain the PM_{10} NAAQS, if there is no next milestone) by the applicable date.

(5) Contingency Measures

Under the Act, once an area fails to meet its RFP requirement or a determination has been made that an area must be reclassified as serious, either due to its impracticability to attain or for failure to attain by the applicable attainment date, contingency measures are then required to be implemented for the area under section 172(c)(9). The SIP containing contingency measures is due with the attainment demonstration SIP by January 18, 2002. Pursuant to section 172(b), EPA will establish this schedule when it takes action to designate PM_{10} areas by July 18, 2000.

(6) NSR

In accordance with section 189(a)(1), moderate area SIPs must contain NSR permit programs. These SIPs are due no later than 18 months after designation of the areas as nonattainment (no later than January 18, 2002). The programs must meet the requirements of section 172(c)(5) of the Act, which requires new source permits to meet the requirements of section 173 of the Act concerning construction and operation of new and modified major stationary sources in nonattainment areas. In addition, under section 189, States must address the specific PM_{10} NSR requirements for new or modified major stationary sources that emit PM_{10}. Areas classified moderate for the revised PM_{10} NAAQS are subject to the same program that moderate areas had to meet under the pre-existing PM_{10} NAAQS.

The EPA provided guidance for implementing new statutory NSR requirements of the 1990 Amendments in a September 3, 1991 memorandum, titled "New Source Review (NSR) Program Supplemental Transitional Guidance on Applicability of New Part D NSR Permit Requirements." This guidance and the 1992 General Preamble are still relevant and should be consulted. The regulations for the nonattainment NSR program can be found at 40 CFR 51.160 - 51.165(a). The EPA has proposed to reform the existing NSR program (61 FR 38250, July 23, 1996), and EPA expects to finalize this action in June 1999. That proposal includes provisions for implementing the NSR program in moderate and serious PM_{10} nonattainment areas.

(7) Conformity

Moderate area SIPs must also provide for general and transportation conformity as these requirements apply pursuant to section 176(c) of the Act. As explained in Attachment C, section 176(c) provides the framework for ensuring that Federal actions conform to air quality plans under section 110 of the Act. Conformity applies to nonattainment and maintenance areas. The EPA has issued rules for general and transportation conformity for States to implement those programs (40 CFR 51.390-51.464). The general conformity rule was issued November 30, 1993 (58 FR 63214). The transportation conformity rule was issued November 24, 1993 (58 FR 62188) and amended August 15, 1997 (62 FR 43780). Under these rules, conformity SIPs are due 12 months after an area is designated nonattainment. However, if an area had previously been designated nonattainment under the pre-existing PM_{10} NAAQS and had already submitted an approvable conformity SIP, then the area would not need to submit another SIP revision.

The EPA's policy concerning the applicability of conformity to areas under the pre-existing PM_{10} standards after EPA revokes those standards should be viewed in terms of two types of areas: areas that attained the pre-existing PM_{10} standards as of September 16, 1997 and areas that did not.

For areas that attained the pre-existing PM_{10} standards as of September 16, 1997, as explained in EPA's interim implementation guidance,[20] EPA will revoke the pre-existing standards for areas that meet two criteria: (1) the State adopts and has all control measures which apply in the nonattainment area submitted to EPA, and EPA approves those measures to make them federally enforceable, and (2) the State certifies that its section 110 SIP is adequate to implement the revised PM_{10} standards and the new $PM_{2.5}$ standards. For such areas that have EPA approved maintenance plans in place at revocation (because they were previously redesignated from nonattainment to attainment), transportation and general conformity will continue to apply because EPA-approved maintenance plans remain effective after the pre-existing standards are revoked. However, transportation and general conformity will not apply after revocation in those nonattainment areas that attained the pre-existing PM_{10} standards as of September 16, 1997, but that were not previously redesignated to attainment and, therefore, do not have EPA-approved maintenance plans. Since these areas will no longer be designated as nonattainment, and nothing in the PM NAAQS rulemaking action (July 18, 1997, 62 FR 38652) provides a basis for retaining conformity requirements for PM, conformity will no longer apply in these areas.

Areas that did not attain the pre-existing PM_{10} standards prior to September 16, 1997 and that, therefore, do not have EPA-approved maintenance plans, will have to meet the requirements of the rule that EPA will promulgate pursuant to section 172(e). Under that rule, EPA intends to address the conformity requirement for these areas.

(2) Serious Areas

(1) Qualifications for the Serious Classification

As discussed above, moderate nonattainment areas that show that they cannot practicably attain, or that actually fail to attain, by the applicable attainment date are reclassified to serious.

(2) Emissions Inventory, Modeling and Attainment Demonstration

States are required to submit a SIP containing an attainment demonstration which includes modeling that shows that the area will be able to attain the NAAQS by the serious area attainment date. For areas which are reclassified as serious because they show that they cannot practicably attain the NAAQS by the moderate area attainment date, the attainment demonstration SIP is due no later than 4

[20]See memorandum "Guidance for Implementing the 1-Hour Ozone and Pre-Existing PM_{10} NAAQS," from Richard D. Wilson, Acting Assistant Administrator for Air and Radiation, to the Regional Administrators, December 29, 1997.

years after the date of reclassification as serious. For areas which are reclassified as serious due to failure to attain the NAAQS by the moderate area attainment date, the State must submit a SIP within 18 months which contains the attainment demonstration. The attainment demonstration for serious area SIPs should utilize EPA modeling guidelines and policies.

(3) BACM/BACT

States are required to submit a SIP which provides for the implementation of BACM/BACT. The BACM/BACT are to be determined for serious nonattainment areas based upon a maximum degree of emissions reductions. The selection of BACM/BACT control measures should be determined on a case-by-case basis taking into account environmental benefit and energy costs, as well as other costs of implementation. For areas reclassified as serious because it is impracticable to attain the standard by the attainment date, the BACM/BACT SIP is due 18 months from the date of reclassification. For areas which are reclassified as serious due to failure to attain the NAAQS by the moderate area attainment date, the BACM/BACT SIP is also due 18 months from the date of reclassification. On August 16, 1994, EPA issued an addendum to the 1992 General Preamble to address requirements for serious areas under the pre-existing PM_{10} NAAQS (59 FR 41998). The guidance described EPA's BACM/BACT policy for the pre-existing PM_{10} NAAQS, which is the same policy that applies to the revised PM_{10} NAAQS. Note that for serious areas, the major source threshold is 70 tons a year rather than 100 tons a year.

(4) Reasonable Further Progress

In accordance with section 189(c), the PM_{10} serious nonattainment area SIPs must also contain quantitative emissions reductions milestones which must be achieved every 3 years and which demonstrate RFP, as defined in section 171 of the Act, until the area is redesignated to attainment. The EPA believes that it is reasonable to key the submittal of the milestones to the date for submission of the serious area SIP containing BACM/BACT, which is due 18 months after reclassification. The EPA believes this is reasonable because the BACM/BACT measures will give rise to the primary emissions reductions leading to attainment. Therefore, in this case, the submittal of the first milestones report will be due 3 years after the submittal date for the serious area BACM/BACT SIP. In addition, within 90 days of the milestone due date, States must submit a demonstration that all measures in the plan have been implemented and that the milestone has been met. The EPA must then determine within 90 days whether or not the State's demonstration is adequate. If a State fails to submit a milestone within the required period, or if EPA determines that an area has not met any applicable milestone, then, within 9 months after the failure or determination, the State must submit a plan revision that assures the State will achieve the next milestone (or attain the PM_{10} NAAQS, if there is no next milestone) by the applicable date.

(5) Contingency Measures

As stated earlier, once an area fails to meet RFP requirements or a determination has been made that an area must be reclassified as serious, either due to its impracticability to attain or for failure to attain by the applicable attainment date, contingency measures are then required to be implemented for the area under section 172(c)(9). The SIP containing contingency measures is due with the attainment demonstration SIP. Pursuant to section 172(b), EPA will establish this schedule when it takes action to reclassify PM_{10} areas to serious.

(6) NSR

The PM_{10} serious area SIPs must provide for an NSR program, as described earlier for moderate areas. The one additional requirement for serious areas is that the major source threshold is lowered from 100 tons per year to 70 tons per year.

(7) Conformity

The PM_{10} serious area SIPs must also provide for a conformity program. Under the Agency's conformity rules, conformity SIPs are due 12 months after an area is designated nonattainment. However, if an area had previously been designated nonattainment under the pre-existing PM_{10} NAAQS and had already submitted an approvable conformity SIP, then the area would not need to submit another SIP revision.

4. SIP Requirements for $PM_{2.5}$ Areas

a. Qualifications for Classifications [New from 8/14/98 version]

As discussed above, EPA believes that, until more ambient air quality data are available that indicate the nature and extent of the $PM_{2.5}$ problem, it is premature to issue definitive guidance on classifications for $PM_{2.5}$. The EPA anticipates that if the $PM_{2.5}$ problem is similar to that for ozone, EPA would recommend a classifications system similar to that for ozone.

b. Emissions Inventory, Modeling and Attainment Demonstration [New from 8/14/98 version]

Section 172(c)(1) of the Act requires each nonattainment area to submit a plan for the implementation of emissions reductions from existing sources which will provide for attainment of the NAAQS. Section 172(c)(3) requires the nonattainment plan to include an emissions inventory.

Section 172(c)(6) requires the plan to contain emission limits and other measures necessary to provide for attainment of the NAAQS. Development of the plan entails the preparation of emissions inventories and use of a model to identify reductions in those precursor emissions which contribute to the formation and transport of $PM_{2.5}$.

As noted elsewhere, EPA will not require $PM_{2.5}$ control measures until after EPA conducts the review of the NAAQS and EPA makes $PM_{2.5}$ nonattainment area designations. In the meantime, States are deploying their $PM_{2.5}$ monitors to gather air quality data that will further the understanding of the nature and extent of the $PM_{2.5}$ air quality problem. Under the Transportation Equity Act for the 21st Century, EPA must designate nonattainment areas by no later than 1 year after the Governor is required to submit the State's designations but no later than 2005. The State's submission deadline is 1 year after the date on which 3 years of monitoring data are available for the area. The EPA expects that, under this schedule, it may start the process of promulgating $PM_{2.5}$ designations as early as 2002 and complete them by 2005. Thus, nonattainment area SIPs will not be due for submission until 3 years after the nonattainment designations, or between 2005 and 2008.

Detailed technical guidance on the development and use of emissions inventories in the attainment demonstration is found in the draft guidance document, "Emissions Inventory Guidance for Implementation of the Ozone and Particulate Matter National Ambient Air Quality Standards (NAAQS) and Regional Haze Regulations." [Note: this document is a draft available for public comment and can be obtained from the following Internet site: http://ttnwww.rtpnc.epa.gov/implement/actions.htm .] That guidance currently notes that a base year to implement the $PM_{2.5}$ NAAQS cannot be specified until the NAAQS review is complete in 2002. The guidance recommends, however, that States begin in 1999 to identify and characterize the sources of PM and PM precursors. The guidance supplements the anticipated proposed Consolidated Emissions Reporting Rule (and, in fact, includes a copy of the draft proposal for reference).

Detailed guidance on the modeling and attainment demonstration for the $PM_{2.5}$ nonattainment area plans is not yet available; EPA anticipates making that guidance available in the spring of 1999. Some principles for modeling for $PM_{2.5}$, however, appear in the draft guidance "Use of Models and Other Analyses in Attainment Demonstrations for the 8-Hour Ozone NAAQS." (See section 5.2.2 of that draft guidance.) [Note: this document is a draft available for public comment and can be obtained from the following Internet site: http://ttnwww.rtpnc.epa.gov/implement/actions.htm .]

The attainment demonstration must provide that emissions reductions needed for attainment occur by the SIP implementation date discussed above. Compliance with the emissions reductions by the SIP implementation date will allow the NAAQS to be attained by the attainment date.

c. RACM/RACT

The discussion above in section 2.a above explains EPA's current views on the RACM/RACT requirement for $PM_{2.5}$ areas.

d. Reasonable Further Progress [Revised since 8/14/98 version]

The EPA intends to issue guidance later on the reasonable further progress requirements for $PM_{2.5}$ nonattainment area SIPs.

e. Contingency Measures [Revised since 8/14/98 version]

The EPA intends to issue guidance later on the contingency measures requirements for $PM_{2.5}$ nonattainment area SIPs. In addition, the guidance below under the section Supplemental Attainment Planning will provide added assurance that any failure to attain the standard by the attainment date will be corrected in an expeditious manner.

f. NSR [Revised since 8/14/98 version]

On October 23, 1997, EPA issued a guidance memorandum[21] on interim implementation of NSR requirements for $PM_{2.5}$. The memorandum addresses the interim use of PM_{10} as a surrogate for $PM_{2.5}$ in meeting NSR requirements under the Act, including the permit programs for prevention of significant deterioration (PSD) of air quality. For areas designated nonattainment for the $PM_{2.5}$ NAAQS, the NSR program will be governed solely by section 173 of the Act (part D, subpart 1). The NSR provisions of subpart 4 will not apply. The EPA will provide additional guidance on the NSR requirement for $PM_{2.5}$ areas in future guidance and rulemakings.

g. Conformity [New from 8/14/98 version]

A $PM_{2.5}$ nonattainment and maintenance area will be subject to the transportation and general conformity provisions contained in section 176(c) of the Act. The EPA's regulations that implement these programs will be amended to clarify their applicability to $PM_{2.5}$ areas. The EPA does not intend to make such amendments, however, until the review of the $PM_{2.5}$ standard is complete.

---

[21] See memorandum from John S. Seitz, Director, Office of Air Quality Planning & Standards to Addressees, "Interim Implementation of New Source Review Requirements for $PM_{2.5}$," October 23, 1997.

h. $PM_{2.5}$ Areas Affected by Transport [New from 8/14/98 version]

Based upon review of the data for $PM_{2.5}$ from the IMPROVE network, EPA believes that transported emissions may contribute significantly in many of the areas in the country that do not meet the NAAQS for $PM_{2.5}$. Because levels of $PM_{2.5}$ are believed to be cumulative by nature, EPA expects that many States receiving transported emissions will not be able to demonstrate attainment of the NAAQS by simply implementing RACM/RACT for $PM_{2.5}$ within the geographic boundaries of the nonattainment area or State. Therefore, EPA believes that participation in a regional planning effort is important for States containing areas that do not meet the $PM_{2.5}$ NAAQS, and that SIPs for these areas must address $PM_{2.5}$ emissions from sources located both inside and outside the boundaries of the nonattainment area.

The section Framework for Planning below contains guidance on harmonizing attainment dates, the attainment demonstration, and other aspects of SIP planning for such situations.

REVISED OZONE and PM NAAQS

1. Nonattainment Area Boundaries
    a. Ozone
    b. $PM_{2.5}$

2. Emergency Episode Procedures

3. Emissions Inventory Projections

4. Operating Permit Framework

5. Corrective Actions

    a. Consequences of Failure to Attain
    b. Supplemental Attainment Planning

6. Economic Incentive Programs

1. Nonattainment Area Boundaries [New from 8/14/98 version]

a. Ozone

This section describes EPA's interpretation of the designations and boundaries requirements applicable to ozone areas. It also describes EPA's actions in announcing or promulgating these decisions. In general, EPA will designate areas nonattainment for the 8-hour ozone NAAQS and classify them at the same time. (The EPA will designate remaining areas "attainment/unclassifiable.") Guidance on classifications for ozone nonattainment areas appears elsewhere in this document.

Section 107(d)(1) of the Act provides that following promulgation of a new or revised NAAQS, Governors must submit to EPA a list of all areas in the State with the recommended designation for each area. The EPA is authorized to make such modifications deemed necessary to the recommended designations of the areas (or portions thereof) including to the boundaries of the areas or portions thereof. If EPA modifies a designation or boundary, it must notify the State at least 120 days in advance of such action in order to give the State an opportunity to demonstrate why the proposed modification is inappropriate.

The TEA-21 establishes modified timeframes for Governors to submit recommended designations and for EPA to promulgate designations for the 8-hour ozone NAAQS. Under section 6103(a) of TEA-21, State Governors are required to submit to the EPA their recommended air quality designations for all areas within their States for the 8-hour ozone standard by July 1999. Guidance on area designations is contained in a recent memorandum issued by EPA[22]. In the guidance, EPA advises States to review ozone air quality monitoring data for 1996-1998 and assess which areas are violating the standard. In making these assessments, States should follow guidance on calculating design values for the new standard[23]. States should document the recommended designations and area boundaries with air quality, source, emissions, modeling data or other additional information as appropriate.

Section 6103(b) of TEA-21 requires EPA to promulgate designations no later than 1 year after the Governors recommended designations are required to be submitted. Therefore, EPA will make ozone designations by July 2000 and notify Governors of any modifications to his or her recommendations at least 120 days in advance of the designations.

---

[22]Memorandum of July 16, 1998, from Sally L. Shaver, Director, Air Quality Strategies and Standards Division to Air Division Director, Regions I - X, re: " Re-issue of the Early Planning Guidance for the Revised Ozone and Particulate Matter (PM) National Ambient Air Quality Standards (NAAQS)." This document is available at the following EPA Internet address: http://ttnwww.rtpnc.epa.gov/implement/actions.htm .

[23][Draft] Guideline on Data Handling Conventions for the 8-Hour Ozone NAAQS. This document will be available through the following EPA Internet address: http://ttnwww.rtpnc.epa.gov/implement/actions.htm .

These statutory provisions provide guidance for the determination of whether an area is to be designated nonattainment. They do not, however, provide explicit criteria for determining the specific boundaries of the nonattainment area.[24] The Act requires that all areas with air quality data showing violations of the 8-hour NAAQS, and nearby areas that cause or contribute to NAAQS violations, must be included in the area designated nonattainment. Section 107(d)(1)(A) defines a nonattainment area as any area that does not meet or that contributes to ambient air quality in a nearby area that does not meet the NAAQS. The EPA's presumption is that nonattainment boundaries reflect the Metropolitan Statistical Area (MSA) or the Consolidated Metropolitan Statistical Area (C/MSA) for all classifications under the 8-hour NAAQS due to the nature of population density, traffic and commuting patterns, commercial development, area growth, and air emissions characteristics of a C/MSA. States may request that the nonattainment area be expanded beyond the C/MSA to include additional counties when those counties contain sources, population, commuting patterns or other factors that may be causing or contributing to the nonattainment problem. States may request that nonattainment areas be smaller than the C/MSA where counties generally are considered to be rural due to relatively small populations or a low degree of urbanization. States may also request that nonattainment areas be less than the C/MSA, but at least include counties with violating monitors, where nonattainment is due solely to regional transport of NOx. Under the NOx SIP call, a number of areas are expected to attain the NAAQS with regional reductions without further control. Examples include States applying for a transitional classification for new 8-hour nonattainment areas that received EPA's regional NOx SIP call.

For counties or C/MSAs that are exceptionally large and that have several distinct parts such that emissions in one part of the county or C/MSA do not cause or contribute to an ozone air quality problem in another part of the county or C/MSA, the nonattainment area may include parts of counties or C/MSAs. In these cases, the State must provide a rationale for its recommendation, explaining how the boundary is consistent with Act requirements. Multistate C/MSAs should coordinate on their recommendations for nonattainment area boundaries and should preferably submit one recommendation for the nonattainment area.

In areas where the 1-hour NAAQS still applies, EPA's presumption is that the designated 8-hour nonattainment area boundary will be the C/MSA or the 1-hour nonattainment area boundary, whichever is larger.

b. $\underline{PM_{2.5}}$ [New from 8/14/98 version]

[24] The guidance refers only to boundaries for nonattainment areas since, in general, once the boundaries are determined for the nonattainment areas, the Governor will recommend and EPA will promulgate a designation of attainment/unclassifiable for the remaining portions of the State.

The EPA believes that, until more ambient air quality data are available that indicate the nature and extent of the $PM_{2.5}$ problem, it is premature to issue definitive guidance on nonattainment boundaries for $PM_{2.5}$. The EPA anticipates that $PM_{2.5}$ will behave in a manner similar to ozone, namely, that the precursors that react to form $PM_{2.5}$ can be generated locally and can also be transported across regional areas. There is also a directly-emitted component of $PM_{2.5}$. The EPA anticipates that if $PM_{2.5}$ behaves in the manner expected, EPA would recommend boundary guidance similar to that described above for ozone.

2. Emergency Episode Procedures [New from 81/4/98 version]

The EPA is developing a proposed rule to revise the emergency episode procedures in 40 CFR part 51, subpart G. That proposed rule will provide a description of the revisions, one of which is the inclusion of a significant harm level for $PM_{2.5}$. The EPA expects to propose the rule by the end of 1998.

3. Emissions Inventory Projections [New from 8/14/98 version]

The EPA anticipates developing, in early 1999, additional guidance on projecting emissions for purposes of attainment demonstrations. In the meantime, EPA's current guidance is applicable.[25,26]

4. Enforceable Regulations [New from 8/14/98 version]

Section 172(c)(6) contains provisions relating to the form of measures that result in emissions reductions needed to achieve attainment of the NAAQS. Emission limitations must be enforceable, but the plan may also include other techniques such as economic incentives. Much of the current guidance[27] is relevant to rules adopted for SIPs under the revised NAAQS.

The EPA's current regulations and policies continue to apply regarding enforceability of emissions limits and measures and incorporation into State title V operating permits.

---

[25]Guidance for Growth Factors, Projections, and Control Strategies for the 15 Percent Rate-of-Progress Plans, EPA, OAQPS, RTP, NC March 1993. EPA-452/R-93-002.

[26]Procedures For Preparing Emissions Projections, EPA, July 1991. EPA-450/4-91-019.

[27]Guidance on Preparing Enforceable Regulations and Compliance Programs for the 15 Percent Rate-of-Progress Plans (EPA-452/R-93-005, June 1993).

5. Corrective Actions [New since 8/14/98 version]

a. Consequences of Failure to Attain

Under section 179(c) of the Act, EPA is required to determine whether an area has attained the air quality standard, based on an area's air quality as of the attainment date. The determination must be made as expeditiously as practicable but no later than 6 months after the attainment date. Under section 179(d) of the Act, a State that receives a finding under section 179(c) that an area has failed to attain must submit a revised SIP within 1 year after the finding that provides for attainment. Under that provision, a new attainment date would be established, and EPA may also prescribe additional measures that the SIP must contain. Attachment C of this guidance contains a description of this provision of the Act. The EPA is not providing guidance in this document on how it might implement sections 179(c) and (d), but may do so at a later date. The section below Supplemental Attainment Planning below provides an enhancement to this process.

Once EPA determines that an area has attained the standard by its attainment date, the area is eligible for redesignation to attainment if it meets the criteria set out in the Act and EPA's redesignation policy and continues to have air quality data that meet the standard.

b. Supplemental Attainment Planning

This section sets forth a process for a State to automatically begin evaluating its SIP when it appears that the 8-hour ozone or $PM_{2.5}$ NAAQS likely will not be attained by the attainment date, despite implementation of all SIP measures.

Section 179(c) and (d) set forth a process for EPA and State actions when an area fails to attain a NAAQS. See Attachment C for a description of this process. This discussion provides additional detail as to how the process should be implemented. The EPA has developed the enhanced process listed below that builds on the section 172(c) and (d) process to ensure that States begin work early enough to correct a situation where it appears that an area is not making adequate progress and is at substantial risk of not attaining the NAAQS. The EPA believes that States will need to establish this process in their SIPs in order to ensure attainment and maintenance of the standards as required under section 110(a).

Step 1. The initial SIP submission for an area must contain an enforceable commitment to revise the SIP upon having pollutant concentrations for 2 years after the SIP implementation date that are above

the level of the NAAQS (i.e., unclean data).[28] The process for revision of the SIP must also include a reanalysis of the boundary of the nonattainment area to ensure that the area includes nearby sources that contribute to the unclean air situation. Exceptions can be allowed for certain extenuating circumstances for which a SIP revision would be impracticable, such as the following:

> --The amount of exceedance of the NAAQS air quality level is minor (e.g., less than 5 percent above the level of the NAAQS);
> --Sources out of compliance may be causing higher than anticipated concentrations, and the State has provided assurance that the sources will be brought into compliance within 1 year;
> --The State has documented that the area is still experiencing concentrations higher than expected due to one or more other States' failure to control emissions that contribute to those higher concentrations. This exception would apply only where the upwind State is obligated by the Act, as a SIP-approved measure, by a SIP call, or other mechanism, to achieve the reductions.

The EPA would not approve a SIP if it failed to contain this commitment. If the State fails to implement the commitment, EPA could find that the State failed to implement its SIP and, thereby, start the sanctions process.

Step 2. Six months after the SIP implementation date as described elsewhere in this guidance, the State must determine whether the area has implemented and achieved compliance with its attainment SIP and control strategy. As described elsewhere in this document, this is the test for determining whether RFP was achieved.

Step 3. Six months after the end of the second air quality monitoring year following the SIP implementation date, the State must determine whether the area has pollutant concentrations that are below the level of the NAAQS (i.e., a 2-year period of clean air quality data). (EPA may make this determination if the State fails to do so.)

Step 4. If the State has a 2-year period of unclean data, the State must--under its original enforceable commitment--revise its SIP to develop a new attainment demonstration to correct the apparent failure

---

[28]For example, for the 8-hour ozone standard, the level is 0.08 ppm, 4th highest daily maximum 8-hour ozone concentration. Under EPA's rounding convention, a monitored value greater than 0.084 ppm is considered "unclean." Thus, if at any monitoring site in the nonattainment area, the average of the 4th highest concentrations for the 2 years is greater than 0.084 ppm, the area would have unclean data.

of the plan to bring about sufficient reductions in pollutant concentrations. The State should consider any contingency measures that it may be required to implement based on a failure to make RFP or to attain. The SIP revision must include a revised attainment demonstration and list of measures that will bring about attainment. The SIP revision must be submitted within 18 months after the determination is made that the area has 2-year period of unclean data. The 18-month date is 1 year after the attainment date.

Step 5. Under section 179(c), by 6 months after the end of the attainment date, EPA must determine if the area has attained the NAAQS. If EPA finds that the area has failed to attain, the State must submit a SIP revision within 1 year that provides for attainment--with adopted measures that bring about the necessary emissions reductions. The State would thus be able to rely on the attainment demonstration work under way from the prior determination that the area had 2 unclean years of data. The State would then adopt the measures already identified in the earlier SIP revision submitted under Step 4 above.

This process provides a mechanism that places the burden on the State to diagnose the cause of potential progress or attainment failures and to take steps to revise the SIP where it appears to be inadequate to result in attainment by the attainment date. It provides for early action such that the State does not delay addressing the problem until after the attainment date passes and will ensure that States can meet the SIP submission requirements of section 179(d). Furthermore, it allows States to first assess the cause of failure and to identify appropriate control measures before EPA may prescribe additional controls under section 179(d).

Attachment A, Table 3 presents timelines for the above process for the various combinations of ozone nonattainment areas.

[Note to reviewers: The EPA solicits comment on how this procedure fits with the Clean Air Act's provisions under section 172(c) that allow two one-year extensions of the attainment date.]

The EPA expects that the State will make the determinations described above (concerning whether an area has a 2-year period of clean or unclean data) publicly available and provide an opportunity for public comment.

6. <u>Economic Incentive Programs</u> [New from 8/14/98 version]

Section 172(c)(6) provides for emissions reductions to be obtained from economic incentives such as fees, marketable permits, and auctions of emission rights. States are encouraged to include

market-based and other nontraditional emission control measures in their SIPs to promote reductions earlier and more cost effectively than traditional programs. The Presidential Memorandum states that 1) implementation of the new NAAQS is to be carried out to maximize common sense, flexibility and cost effectiveness and 2) EPA is to work with the States to develop control programs which employ regulatory flexibility to minimize economic impacts on businesses, large and small, to the greatest possible degree consistent with public health protection. The memorandum specifically directed EPA to encourage clean air investment funds and cap and trade programs. Depending on a State's specific air quality situation, other market-based programs may engender emissions reductions and clean air more efficiently than traditional control measures. Programs to consider include, but are not limited to, emission fees, public education, subsidies, and open market trading.

To provide guidance to States on how to develop an approvable market-based program, EPA published the Economic Incentive Program rules on April 7, 1994. The EPA is planning to revise these guidelines to reflect the new NAAQS and new policy developments (e.g., open- market trading). The EPA plans to have the new draft guidance document in the future. The EPA also plans to release guidance on the Clean Air Investment Fund in the same timeframe. In the interim, EPA will continue to work with individual States in the development of SIP approvable innovative strategies.

$PM_{2.5}$ NAAQS and REGIONAL HAZE PROGRAM

1. Inter-program Coordination
2. Update on Regional Modeling

The EPA intends to provide guidance on inter-program coordination between the $PM_{2.5}$ NAAQS and the regional haze programs, as well as regional modeling, after EPA issues the final rule on regional haze, currently scheduled for the winter of 1998.

ALL PROGRAMS (Ozone, $PM_{2.5}$, REGIONAL HAZE)

[New section from 8/14/98 version]

Framework for Planning

a. Background and Purpose
b. The Need for Regional Planning
c. Development of a Regional Air Quality Planning Effort
d. 8_Hour Ozone and $PM_{2.5}$ Areas Affected By Transport

Framework for Planning

a. Background and Purpose

The purposes of this guidance are (i) to provide a framework for future regional air quality planning efforts for the ozone NAAQS, PM NAAQS, and regional haze programs; (ii) to emphasize that SIP credit toward attainment demonstrations can be obtained from emissions reductions outside individual nonattainment areas under certain circumstances; and (iii) to address requirements for SIP attainment dates, attainment demonstrations, and other SIP requirements for areas using a regional planning approach or for areas that are affected by transport.

Over the past several years, the regional nature of air quality problems has been a significant topic of discussion between EPA, the States, and interested stakeholders. This guidance incorporates lessons learned from past regional air quality planning efforts as well as important concepts taken from discussions of the FACA Subcommittee on Ozone, Particulate Matter, and Regional Haze Implementation Programs.

Additional information appears in Attachment F on the basis for regional air quality planning efforts and the timing for $PM_{2.5}$ and regional haze SIPs.

b. The Need for Regional Planning

Based on the body of evidence demonstrating that ozone, PM and regional haze share common precursors, atmospheric processes, and spatial patterns, EPA believes that States (and tribes, at their discretion), in partnership with other interested stakeholders, should consider conducting future regional air quality planning efforts to address these three air quality programs. Technical efforts, such as development of emissions inventories and the evaluation of future strategy options, will also need coordination across programs and integration to the greatest degree possible. Analyses conducted for one program should take into account the related effects on the other programs.

The national goal of the visibility program, as set forth by Congress, is to "remedy any existing impairment and prevent any future impairment" in mandatory Class I Federal areas that are caused by human activity. Under section 169A of the Act, a State is required to submit a visibility SIP if the State contains sources of emissions which "may be reasonably anticipated to cause or contribute to any impairment of visibility" in any Class I area. (The June 1998 TEA-21 now links regional haze SIP deadlines to the dates for designation of $PM_{2.5}$ nonattainment and attainment areas with the intent of coordinating development of control strategies for regional haze and the $PM_{2.5}$ NAAQS. Attachment F describes those provisions of the TEA-21 legislation.) Because scientific evidence and monitoring data show that transported emissions can contribute to visibility impairment in many mandatory Federal Class I areas, and these areas can be significantly affected by relatively small changes in emissions

loadings, EPA believes that, under the regional haze program, it will be necessary for each of the 48 contiguous States (and associated tribes at their discretion) to initially participate in regional coordination and planning activities to some degree.

This is not to say that each participating State would necessarily be required to implement additional emissions reductions strategies for regional haze purposes, however. Rather, EPA strongly recommends that all States (and tribes at their discretion) participate at least in the organizational development and technical assessment phases of a regional planning process in order to determine relative State contributions to visibility impairment in the 156 Class I areas across the country, and to identify which states should work together in the strategy development process. The EPA believes that the revised SIP deadlines for regional haze under TEA-21 will allow sufficient time to conduct regional planning efforts. To accomplish this, States involved in regional planning efforts will also need to better understand regional $PM_{2.5}$ inventories, and which $PM_{2.5}$ constituents are the major contributors to $PM_{2.5}$ mass.

Establishing this information base early will enable States to coordinate future control strategies for both the $PM_{2.5}$ and regional haze programs. Because of the long residence time and potential for long-range transport of $PM_{2.5}$, EPA anticipates that regional strategies may be needed to address some $PM_{2.5}$ nonattainment areas, particularly in the Eastern U.S. However, this can only be determined with greater certainty after 3 years of monitoring data are collected, and the regional extent of nonattainment problems can be determined.

In the near term, the same is expected to be true for implementation of the 8-hour ozone NAAQS. In the Eastern U.S., the regional NOx reduction strategy, promulgated by EPA in September 1998, should help to bring a number of eastern nonattainment areas into attainment for the 1-hour ozone standard (63 FR 57356, October 27, 1998). It should also result in many areas attaining the 8-hour standard as well. Even those that do not come all the way into attainment should benefit greatly from decreased ozone concentrations. However, in the near term, it is uncertain to what extent additional regional planning will be needed to address continued ozone nonattainment and maintenance issues.

Incentives for Regional Planning. As stated above, the regional nature of haze calls for multistate coordination and planning. That being so, the similar emission precursors, atmospheric processes, and spatial patterns of ozone, particulate matter, and regional haze suggest pursuing integrated regional planning at an early stage. By participating actively in a regional planning process, one State may be able to take credit for the air quality benefits realized from emissions reductions implemented by other States.

In developing a demonstration of attainment for the NAAQS or a demonstration of reasonable progress for regional haze, a State will need to first understand the pollutants and sources contributing to the relevant nonattainment problem or Class I area and then develop a plan for reducing emissions to achieve air quality goals. This process typically involves reviewing monitoring data, developing an emissions inventory, determining episodes or periods of interest, and analyzing future scenarios using technical tools (such as models or other appropriate methods). By doing this, a State will be able to evaluate current pollutant levels, identify contributing sources or activities, and estimate the impact of future strategies on air quality, economic sectors, and other factors. In developing its implementation plan to meet a specific air quality goal, a State may take credit for enforceable emissions reduction strategies that are already in place or planned for implementation within:

- Another State, as long as there is an adequate technical demonstration showing that the regional strategies will contribute to improved air quality in the nonattainment area or class I area;
- The same State (supported by an adequate technical demonstration);
- The nonattainment area (supported by an adequate technical demonstration);
- A neighboring State that is part of a multistate nonattainment area (supported by an adequate technical demonstration).

Regardless of the number of States involved in the planning process, any State wishing to take credit for emissions reductions from other States to meet its own goals will need to provide an adequate technical justification showing the extent to which the contributing States must reduce emissions in order for the State to meet the air quality goal. One State's reliance on emissions reductions from other States will require close coordination with those other States, and the measures relied upon must be enforceable and quantifiable. Some States have expressed the concern that if State B takes credit for one of State A's control measures, and State A wishes to modify or eliminate that measure in favor of an alternative strategy, then State A will have to submit to EPA an additional demonstration[29] showing that the revision will not interfere with attainment or progress in the other affected States. The EPA believes that such situations should be addressed on a case-by-case basis, and that, in general, these situations can be minimized through frequent coordination among States.

The EPA is strongly encouraging regional planning, but not requiring it. Any future planning process should be led by the States (and tribes at their discretion), not EPA. The EPA believes the task of defining the specific States that will comprise regional planning efforts should be the ultimate responsibility of the States (and tribes at their discretion) as well. Nevertheless, due to the significant

[29] See noninterference requirement in section 110(l) of the Act.

differences between the Eastern and Western U.S., in terms of emissions density, ambient pollutant levels monitored, visibility impairment levels, meteorology, and population density, EPA recommends that the States begin the organizational development process by starting broadly, with two groups of States representing the Eastern and Western U.S., respectively.

The EPA recognizes that considerable technical and policy expertise has been developed by the States and stakeholder groups as a result of past regional planning efforts, and EPA supports future approaches that will take advantage of and expand upon this level of expertise.

c. Development of a Regional Air Quality Planning Effort

(1) Important Principles for Future Regional Air Quality Planning Efforts

Over the past several years, EPA has supported and participated in the activities of several regional air quality management efforts. In addition, the FACA Subcommittee on Ozone, Particulate Matter, and Regional Haze Implementation Programs spent a significant amount of time discussing regional air quality planning efforts and provided ideas on possible structures, authorities, and responsibilities for such efforts. By drawing upon past experience, as well as the ideas of the Subcommittee, EPA recommends that the States (and tribes at their discretion) develop future regional air quality planning efforts consistent with the following important principles:

(A) Organization and Representation

- Regional planning efforts should be a product of State (and, at the discretion of any tribe, tribal) leadership and, thus, should be led by States (and tribes), not EPA. Representatives should have the authority to speak for their organizations.

- States should be officially represented by the Governor or Governor's designee. This is consistent with language regarding interstate transport commissions and visibility transport commissions in the Act, though it is not required to the extent that these groups are not organized under the interstate transport and visibility commission provisions of the Act.

- Regional planning efforts need to reflect the interests of not only all appropriate levels of State and tribal government, but also the diversity of interests within the region, including environmental organizations, industry groups, and others, as appropriate.

- The roles of EPA and other Federal agencies should be clearly delineated in the early stages of organizational development.

- The organization of a regional effort should recognize and accommodate important functional needs (e.g., technical assessment, public outreach and communication, strategy development, process oversight, etc.).

- Any geographic areas of special need or focus (e.g., Class I areas, other important areas for PSD, etc.) should be clearly defined early in the process.

- A process should be established by which the regional planning effort or a successor body will follow up on unresolved issues, track regional progress, and implement alternative provisions or actions.

(B) Work Plan and Schedules

- States (and tribes at their discretion) should be prepared to make strong, early commitments to implementing the outcome of the regional process to ensure that SIP submittal dates are met. This means allowing time for formation and conclusion of the regional planning process and SIP/TIP development and review by appropriate levels of government and the public before submission to EPA.

- The EPA should be prepared to deliver appropriate guidance to support the regional planning process. The EPA should have the flexibility to adjust certain interim milestones as appropriate. However, EPA should also set a clear endpoint to these efforts, consistent with Act deadlines for SIP submissions.

- Participants in regional planning efforts should set up a work plan to carry out their work. The work plan should contain clearly stated products of the process, dates for completion of those products and mechanisms for funding the needed analyses.

(C) Consistency with Regional Planning Effort and Between Regional Planning Efforts

- Regional efforts need to be planned in such a way as to ensure that the essential elements (e.g., emissions inventories for modeling purposes) are consistent across the region to support regional analyses.

- All sources of emissions need to be accounted for--and treated consistently--in technical analyses across a transport region and in the recommendations that are made.

- Regional planning efforts should establish how emissions transported from outside of the region will be quantified and considered (e.g., international transport).

- Regional planning efforts should establish a process for selection of baselines, identification of strategy and control technology options, and selection of final recommendations.

(D) EPA's Participation in Regional Planning

- The EPA needs to be an active participant in regional planning efforts. The EPA should provide early input on issues of concern and demonstrate a willingness to reflect outcomes of the regional planning process in its national policies.

- The EPA has a responsibility to independently review the adequacy of implementation plans in public rulemaking processes, and to consider all public comments received on a plan in determining if it meets applicable requirements. The EPA may not abandon its responsibility for independent decision making and may not prejudge the outcome of notice-and-comment national rulemaking.

- The EPA should provide regulatory and administrative incentives for active, broad, and balanced participation in regional air quality planning efforts.

- The EPA should provide adequate technical support to regional planning efforts to ensure the consistent development of information and analytical tools across the multistate area.

- The EPA should continue to actively consult with States (and tribes at their discretion) as they develop SIPs/TIPs to implement the recommendations of the regional planning effort. By maintaining close coordination, the States (and tribes at their discretion) can make necessary modifications earlier in the process, and EPA will be able to perform more expeditious reviews of SIP submittals.

- The EPA should make every reasonable effort to review implementation plans within the timeframes set out in section 110(k) of the Act.

(2) Technical Assessment Process

In the past, the technical assessment process has involved reviewing monitoring data, developing an emissions inventory, and analyzing future emissions reductions scenarios using models or other appropriate methods. These activities are designed to meet several objectives: to understand

current pollutant levels; to identify the principal contributing sources or activities; to estimate benefits due to implementation of other air quality programs; to determine which States or areas are contributing to another State's problem; and to estimate the impact of future strategies on air quality, control costs and other factors. The EPA is currently working closely with the States to develop enhanced technical tools (monitoring networks, emissions factors, emissions inventories, regional scale models, etc.) needed to conduct these assessments for the regional haze, $PM_{2.5}$, and ozone programs.

The technical assessment process should include the following steps:

Step 1. Problem definition -The first task of the technical assessment process for a regional planning effort will be to clearly define the problem to be evaluated. For example, are there both nonattainment and regional haze issues that need to be addressed?

Step 2. Emissions inventory - It will be critical to have enhanced, statewide emissions inventories for ozone precursors, primary PM, and PM precursors. To facilitate coordinated analyses across a region, the State will need to ensure consistent methods for defining and characterizing sources and their emissions.

Step 3. Development of tools to evaluate strategy alternatives - The regional planning effort will need to agree upon methodologies and criteria to be used to evaluate alternative emissions management strategies in a consistent manner. Accordingly, the group will need to define how it will incorporate health and environmental costs and benefits, economic and demographic projections, definition of "baseline" condition due to implementation of other programs, and other factors into its assessment. Many past regional planning efforts have used regional scale modeling approaches to evaluate alternatives, but such approaches are not required if the States can provide adequate technical analyses using another method.

(3) Strategy Development and Adoption

Once the technical assessment phase is completed, the regional body should move to the strategy development and adoption phase. The regional planning effort may adjust its membership at this time if all the States can agree that one or more particular States are either not significantly contributing to a nonattainment problem or interfering with maintenance in another State, nor is the State "reasonably anticipated to cause or contribute to any impairment of visibility" in any Class I area. A State that does not meet the preceding description, however, may wish to retain its participation in the regional planning effort if it would benefit from a regional strategy. In this phase, the regional body should strive to develop a consensus about: (a) the set of regional emissions reductions strategies needed to attain the NAAQS or make "reasonable progress" toward the national visibility goal in class

I areas; and (b) the degree to which each State and relevant source category should be required to reduce emissions to implement the recommended strategies. The final step would be for each State to adopt a SIP including enforceable measures as part of the regional strategy, including any strategies designed to improve air quality in nonattainment or class I areas located outside the State.

d. 8-Hour Ozone and $PM_{2.5}$ Areas Affected By Transport

Many areas are impacted by transport of ozone and its precursors that may affect the areas' ability to attain the revised ozone standard. Likewise, as noted above, EPA expects that many future $PM_{2.5}$ nonattainment areas may also be in a similar situation. If an area is impacted by transport, the area can satisfy its SIP requirements as follows:

- **Attainment date:** The State will have to demonstrate that the area's presumptive attainment date (discussed above in this guidance document) is impractical due to the unavailability or infeasibility of local controls and the nature and degree of transported pollutants and precursors into the area. The State will also have to demonstrate that the attainment date requested is as expeditious as practicable but no later than that of an area contributing significantly to the area's nonattainment.
- **SIP implementation date and reasonable further progress:** The SIP implementation date (the date by which all control measures must be fully implemented) for the controls on the contributing emissions must be at least 3 monitoring years before the revised attainment date in most cases. Local controls that are available and feasible must be implemented at least three ozone seasons before the original presumptive attainment date in order to ensure that attainment is as expeditious as practicable. Reasonable further progress will be met when all the measures needed for attainment are implemented by the SIP implementation dates.
- **Attainment demonstration:** Areas will have to demonstrate attainment using modeling for the area unless EPA determines modeling for the area is infeasible. A procedure for an alternative demonstration for the 8-hour ozone NAAQS can be found in Attachment E.
- **RACM/RACT:** If the area is able to demonstrate attainment of the standard with local and/or transported emission control measures in the SIP, then RACM/RACT will be met and additional measures would not be required as being reasonably available.
- **Other requirements** (e.g., NSR, conformity): These are the same as for traditional areas under the 8-hour ozone standard. Requirements under the $PM_{2.5}$ standard related to NSR and conformity will be developed later.

In addition, groups of States affected by transport can adopt control measures across a region (e.g., the Northeast) to help areas attain the ozone NAAQS if the affected States choose to do so. If

States rely on the measures to bring areas into attainment, then the measures must be included as part of the attainment demonstration for any such areas.

Attachment A: Classification Scheme for Nonattainment Areas for the 8_Hour Ozone NAAQS

Table 1: Summary of Requirements by Classification [Revised since 8/14/98 version]

(Table footnotes in parentheses)

Three formal classifications:	Transitional		Traditional	International Transport
Type of Area Eligible:	**Areas that have had the 1-hour standard revoked, that are designated nonattainment for the 8-hour standard and that project attainment of the 8-hour standard through the regional NOx strategy**	**Areas that have had the 1-hour standard revoked, that are designated nonattainment for the 8-hour standard, and for which the regional NOx strategy is not sufficient for attainment of the 8-hour standard or does not apply**	**1. Areas that have had the 1-hour standard revoked but are designated nonattainment for the 8-hour ozone standard (and do not qualify for or want transitional); and 2. areas that are nonattainment for the 8-hour standard and for which the 1-hour standard is not revoked**	**1. Areas that have had the 1-hour standard revoked but are designated nonattainment for the 8-hour ozone standard; and 2. areas that are nonattainment for the 8-hour standard and for which the 1-hour standard is not revoked**
Designation By:	July 18, 2000			
Classification By:	July 18, 2000 (1)	July 18, 2000 (1)	July 18, 2000	July 18, 2000 (1)
SIP Due By:	September 30, 1999 (2) - NOx SIP call SIP, including attainment demonstration (i.e., documentation referencing EPA modeling and emissions inventory)	September 30, 1999 (2) - NOx SIP call SIP, where applicable, and May 1, 2000 attainment SIP	July 18, 2003 (3)	July 18, 2003 (3)

Three formal classifications:	Transitional		Traditional	International Transport
Type of Area Eligible:	**Areas that have had the 1-hour standard revoked, that are designated nonattainment for the 8-hour standard and that project attainment of the 8-hour standard through the regional NOx strategy**	**Areas that have had the 1-hour standard revoked, that are designated nonattainment for the 8-hour standard, and for which the regional NOx strategy is not sufficient for attainment of the 8-hour standard or does not apply**	**1. Areas that have had the 1-hour standard revoked but are designated nonattainment for the 8-hour ozone standard (and do not qualify for or want transitional); and 2. areas that are nonattainment for the 8-hour standard and for which the 1-hour standard is not revoked**	**1. Areas that have had the 1-hour standard revoked but are designated nonattainment for the 8-hour ozone standard; and 2. areas that are nonattainment for the 8-hour standard and for which the 1-hour standard is not revoked**
RFP/Implementation by:	May 1, 2003 (4) RFP is NOx SIP call emissions reductions on schedule	May 1, 2003 (4) Where applicable, RFP is NOx SIP call emissions reductions on schedule. Other emissions reductions needed for attainment on same schedule.	May 1, 2005 (4) May 1, 2007 (4) or May 1, 2008 (4) For areas that are nonattainment for only the 8-hour NAAQS: RFP is emissions reductions needed for attainment by the implementation date (3 ozone seasons before attainment date) For areas that are nonattainment for both NAAQS: until the attainment date for the 1-hour standard, RFP required under subpart 2 for the 1-hour standard should be sufficient to meet RFP for the 8-hour standard; RFP after final attainment date for 1-hour standard is emissions reductions needed for attainment by the implementation date (3 ozone seasons before attainment date)	May 1, 2005 States should follow the RFP guidance discussed under traditional areas, in consultation with the EPA Regional Offices
Attainment By: (5)	December 31, 2005 (6)	December 31, 2005 (6)	December 31, 2007 (6); December 31, 2009 (6); or December 31, 2010 (6)	December 31, 2007

Proposed EPA Guidance (November 17, 1998 Draft)

Three formal classifications:	**Transitional**		**Traditional**	**International Transport**
Type of Area Eligible:	**Areas that have had the 1-hour standard revoked, that are designated nonattainment for the 8-hour standard and that project attainment of the 8-hour standard through the regional NOx strategy**	**Areas that have had the 1-hour standard revoked, that are designated nonattainment for the 8-hour standard, and for which the regional NOx strategy is not sufficient for attainment of the 8-hour standard or does not apply**	**1. Areas that have had the 1-hour standard revoked but are designated nonattainment for the 8-hour ozone standard (and do not qualify for or want transitional); and 2. areas that are nonattainment for the 8-hour standard and for which the 1-hour standard is not revoked**	**1. Areas that have had the 1-hour standard revoked but are designated nonattainment for the 8-hour ozone standard; and 2. areas that are nonattainment for the 8-hour standard and for which the 1-hour standard is not revoked**
Attainment Demonstration:	EPA modeling and emissions inventory for the SIP call budget, unless State elects to perform other modeling	In OTAG domain and receive SIP call: no additional modeling required; may use other demonstration techniques EPA will provide; State may elect to do additional modeling Inside OTAG domain but do not receive SIP call: no new modeling if projected air quality concentrations close to NAAQS; additional analysis if projected air quality concentrations much greater than NAAQS Outside the OTAG domain: additional modeling required if none exists; may use other EPA demonstration techniques available	Modeled attainment test relying on ambient data. Use model in "relative" rather than "absolute" fashion with optional weight of evidence test to reduce uncertainty. Encourage use of CMAQ/MODELS3, subject to same criteria as "alternative" models; EPA will not identify guideline model. Technical guidance available.	Demonstrate attainment "but for" international emissions. Use same guidance as for traditional areas, subject to negotiation between Region and State based on area-specific characteristics.
Emissions Inventory:	Rely on emissions inventories from NOx SIP call modeling	Rely on emissions inventories from SIP call modeling, as appropriate, plus other existing inventories	Draft emissions inventory guidance recommends the use of a 1999 base year emission inventory for attainment demonstration purposes. See detailed technical guidance.	Use same guidance as for traditional areas, subject to negotiation between Region and State based on area-specific characteristics

Three formal classifications:	Transitional		Traditional	International Transport
Type of Area Eligible:	**Areas that have had the 1-hour standard revoked, that are designated nonattainment for the 8-hour standard and that project attainment of the 8-hour standard through the regional NOx strategy**	**Areas that have had the 1-hour standard revoked, that are designated nonattainment for the 8-hour standard, and for which the regional NOx strategy is not sufficient for attainment of the 8-hour standard or does not apply**	**1. Areas that have had the 1-hour standard revoked but are designated nonattainment for the 8-hour ozone standard (and do not qualify for or want transitional); and 2. areas that are nonattainment for the 8-hour standard and for which the 1-hour standard is not revoked**	**1. Areas that have had the 1-hour standard revoked but are designated nonattainment for the 8-hour ozone standard; and 2. areas that are nonattainment for the 8-hour standard and for which the 1-hour standard is not revoked**
Control Measures:	RACM/RACT will be met if the area submits a SIP that EPA approves as providing for attainment. The SIP providing for attainment will be the NOx SIP call SIP, including attainment demonstration (i.e., documentation referencing EPA modeling and emissions inventory).	RACM/RACT will be met if the area submits a SIP that EPA approves as providing for attainment. The SIP providing for attainment will consist of: • If applicable, the SIP States submit in response to the NOx SIP call, and • A SIP with additional measures needed for attainment.	RACM/RACT will be met if the area submits a SIP that demonstrates attainment of the standard	RACM/RACT will be met if the area submits a SIP that demonstrates attainment "but for" the international emissions impacting the area
Contingency Measures for RFP Failure or Failure to Attain:	Modeling predicts area will attain by a "margin of safety;" this is sufficient to satisfy the requirement for contingency measures	Provide contingency measures that reduce emissions of the ozone precursor providing most additional emissions reductions	Provide contingency measures that reduce emissions of the ozone precursor providing most additional emissions reductions	Provide contingency measures that reduce emissions of the ozone precursor providing most additional emissions reductions
NSR:	Forthcoming rulemakings will cover	Forthcoming rulemakings will cover	Program under EPA regulations	Program under EPA regulations
Supplemental Attainment Planning:	SIPs should contain an enforceable commitment for a SIP revision upon having pollutant concentrations for 2 years after the SIP implementation date that are above the level of the NAAQS (i.e., unclean data). (7) This process is designed to ensure areas that don't attain by the attainment date can submit SIPs in accordance with section 179(c).			

Three formal classifications:	Transitional		Traditional	International Transport
Type of Area Eligible:	**Areas that have had the 1-hour standard revoked, that are designated nonattainment for the 8-hour standard and that project attainment of the 8-hour standard through the regional NOx strategy**	**Areas that have had the 1-hour standard revoked, that are designated nonattainment for the 8-hour standard, and for which the regional NOx strategy is not sufficient for attainment of the 8-hour standard or does not apply**	**1. Areas that have had the 1-hour standard revoked but are designated nonattainment for the 8-hour ozone standard (and do not qualify for or want transitional); and 2. areas that are nonattainment for the 8-hour standard and for which the 1-hour standard is not revoked**	**1. Areas that have had the 1-hour standard revoked but are designated nonattainment for the 8-hour ozone standard; and 2. areas that are nonattainment for the 8-hour standard and for which the 1-hour standard is not revoked**
Framework for Planning:	Not applicable		Specifies conditions under which SIP credit toward attainment demonstrations can be obtained from emissions reductions outside nonattainment areas; and provides an attainment demonstration and attainment date alignment process	Not applicable
Conformity:	Need on-road mobile emissions budget and VMT projection that reflects SIP attainment inventory; forthcoming rulemaking will cover	Need on-road mobile emissions budget and VMT projection that reflects SIP attainment inventory; forthcoming rulemaking will cover	Program under EPA regulations. Need on-road mobile emissions budget and VMT projection that reflects SIP attainment inventory; forthcoming rulemaking will cover.	Program under EPA regulations. Need on-road mobile emissions budget and VMT projection that reflects SIP attainment inventory; forthcoming rulemaking will cover.

(1) The transitional and international transport classifications will be assigned by July 18, 2000 before EPA completes rulemaking action on the SIPs. If EPA does not approve a transitional area SIP, EPA will withdraw the classification.

(2) The September 30, 1999 due date for the NOx SIP call SIP is based on the final SIP call.

(3) The EPA is required to establish the SIP submittal date through rulemaking. The EPA plans to take rulemaking action on the SIP submittal date at the time it designates areas and to establish no later than July 18, 2003 as the date.

(4) As discussed in the RFP section, this is the date that areas will need to implement the control measures needed for attainment to ensure reasonable progress toward attainment. They are:

May 1, 2003-- Transitional areas

May 1, 2005--Traditional areas--

1. Areas designated nonattainment for only the 8-hour standard;
2. Areas that are nonattainment for both standards and have attainment dates of 2003 or earlier under the 1-hour standard; and also

3. Other areas that are nonattainment for the 8-hour standard, have not had the 1-hour standard revoked, and are designated attainment/unclassifiable for the 1-hour standard..

Also, International Transport areas

May 1, 2007--Traditional areas that are nonattainment for both standards and classified as severe-15 for the 1-hour standard.

May 1, 2008--Traditional areas that are nonattainment of both standards and classified as severe-17 for the 1-hour standard.

Not yet determined--EPA will develop--see text for discussion--The area that is nonattainment of both standards and classified as extreme for the 1-hour standard.

(5) Attainment is as expeditiously as practicable, as required by the Act. The EPA anticipates that the attainment date for areas within each classification will be no later than the date indicated. The EPA will formally establish these dates when EPA takes rulemaking action on the specific SIPs submitted by the States. The formal assignment of attainment dates will be based on EPA's review of the facts and circumstances specific to each nonattainment area and the SIP for the area. The definition of attainment date is the same for all three classifications of ozone area. The attainment date is defined as the date by which areas must attain the 8-hour ozone standard.

(6) December 31, 2005-- Transitional areas

December 31, 2007-- Traditional areas:

1. Areas designated nonattainment for only the 8-hour standard;
2. Areas that are nonattainment for both standards and have attainment dates of 2003 or earlier under the 1-hour standard; and also
3. Other areas that are nonattainment for the 8-hour standard, have not had the 1-hour standard revoked, and are designated attainment/unclassifiable for the 1-hour standard.

Also, International transport areas.

December 31, 2009-- Traditional areas that are nonattainment for both standards and classified as severe-15 for the 1-hour standard.

End of the ozone season, 2010--Traditional areas that are nonattainment for both standards and classified as severe-17 for the 1-hour standard.

December 31, 2010--Traditional areas that are nonattainment for both standards and classified extreme for the 1-hour standard.

(7) E.g., for the 8-hour ozone standard, the level is 0.08 ppm, 4th highest daily maximum 8-hour ozone concentration. Under EPA's rounding convention, a monitored value greater than 0.084 ppm is considered "unclean." Thus if at any monitoring site in the nonattainment area, the average of the 4th highest concentrations for the two years is greater than 0.084 ppm, the area would have unclean data.

Table 2: Overall Timeline by Ozone Classification [Revised since 8/14/98 version]

Action:	Activity
Transitional Areas	
By September 30, 1999	• States submit SIP in response to the NOx SIP call. The SIP serves as the required SIP for areas that attain through the SIP call and serves as part of the SIP for areas that benefit partially from the SIP call.
By May 1, 2000	• For areas that attain through the SIP call, States submit attainment demonstration documentation referencing EPA modeling and emissions inventory. • For areas that benefit partially or not at all from the SIP call, States submit attainment demonstration SIP with any control measures needed to demonstrate attainment • The EPA expects to complete rulemaking on NOx SIP call SIPs
By July 18, 2000	For all areas, EPA finalizes: • Determination on transitional classification • Nonattainment designation (1)
By December 2000	For areas that attain through the NOx SIP call, EPA finalizes: • Rulemaking on the attainment demonstration and documentation associated with the NOx SIP call SIP • Assignment of an attainment date For areas that rely partially on the SIP call for attainment, EPA finalizes: • Rulemaking on attainment SIP, including any control measures needed to demonstrate attainment • Assignment of an attainment date For areas outside the SIP call region, EPA finalizes: • Rulemaking on attainment SIP, including any control measures needed to demonstrate attainment • Assignment of an attainment date
By May 1, 2003	Control measure implementation date
By December 31, 2005 (2)	Transitional area attainment date

Action:	Activity
Traditional Areas	
By July 18, 2000	Finalize designation (1), classification and SIP due date (3)
By July 18, 2003 (3)	Nonattainment area SIP due for areas
By January 18, 2005 (4)	The EPA completes rulemaking action on SIPs, including assigning attainment dates
By May 1, 2005	Control measure implementation date for: 1. Areas designated nonattainment for only the 8-hour standard; 2. Areas that are nonattainment for both standards and have attainment dates of 2003 or earlier under the 1-hour standard; and also 3. Other areas that are nonattainment for the 8-hour standard, have not had the 1-hour standard revoked, and are designated attainment/unclassifiable for the 1-hour standard..
By May 1, 2007	Control measure implementation date for areas that are nonattainment for both standards that are classified severe-15 under the 1-hour standard
By December 31, 2007 (2)	Attainment date for: 1. Areas designated nonattainment for only the 8-hour standard; 2. Areas that are nonattainment for both standards and have attainment dates of 2003 or earlier under the 1-hour standard; and also 3. Other areas that are nonattainment for the 8-hour standard, have not had the 1-hour standard revoked, and are designated attainment/unclassifiable for the 1-hour standard.
By May 1, 2008	Control measure implementation date for areas that are nonattainment for both standards that are classified severe-17 under the 1-hour standard
By December 31, 2009 (2)	Attainment date for areas that are nonattainment for both standards that are classified severe-15 under the 1-hour standard
Not yet determined; EPA will develop; see discussion in text	Control measure implementation date for the area classified extreme for the 1-hour standard.
By the end of the ozone season, 2010 (2)	Attainment date for areas that are nonattainment for both ozone standards that are classified severe-17 under the 1-hour standard
By December 31, 2010 (2)	Attainment date for areas that are nonattainment for both ozone standards that are classified extreme under the 1-hour standard
International Transport Areas	
By July 18, 2000	Finalize designation (1), classification and SIP due date (3)
By July 18, 2003 (3)	Nonattainment area SIP due.
By January 18, 2005 (4)	The EPA completes rulemaking action on SIPs, including assigning attainment dates
By May 1, 2005	Control measure implementation date

Action:	Activity
December 31, 2007 (2)	Attainment date for areas that are nonattainment for only the 8-hour NAAQS and for areas that are nonattainment for both ozone standards

(1) This footnote denotes an activity that has a deadline under the Act. Designations must be completed no later than 3 years from promulgation of revised NAAQS, in this case by July 18, 2000.

(2) This footnote denotes an activity that has a deadline under the Act. Nonattainment areas must attain as expeditiously as practicable but by no later than 5 years from the date of designation. This attainment date can be extended for up to an additional 5 years.

(3) This footnote denotes an activity that has a deadline under the Act. Nonattainment SIPs are due by a date established by EPA (at the time of designation) which can be no later than 3 years from the date of designation. As provided in the table, EPA will establish this date by July 2000.

(4) This footnote denotes an activity that has a deadline under the Act. The EPA must complete rulemaking action on SIPs no later than 18 months from when the SIP is submitted: 6 months for completeness and 12 months for review to determine if a complete SIP meets the statutory requirements. For example, if a SIP is submitted on July 18, 2003, then EPA would have no later than January 18, 2005, the date indicated in the table, to complete action on it.

Table 3: Supplemental Attainment Planning Timeline [New since 8/14/98 version]

Type of Area	SIP Submittal	SIP Implementation Date	RFP Check	2 Year Clean Data Check	Attainment date *	Attainment Determination	SIP Revision Due for Areas with 2 Years of Unclean Data	SIP Revision Due for Areas that Failed to Attain
Transitional	September 1999/May 2000	May 1, 2003	December 31, 2003	June 30, 2005	December 31, 2005	June 30, 2006	December 31, 2006	June 30, 2007
Traditional - Nonattainment for the 8-hour NAAQS**	July 2003	May 1, 2005	December 31, 2005	June 30, 2007	December 31, 2007	June 30, 2008	December 31, 2008	June 30, 2009
Traditional - 8- and 1-hour (Severe-15) Nonattainment Areas	July 2003	May 1, 2007	December 31, 2007	June 30, 2009	December 31, 2009	June 30, 2010	December 31, 2010	June 30, 2011
Traditional - 8- and 1-hour (Severe-17) Nonattainment Areas	July 2003	May 1, 2008	December 31, 2008	June 30, 2010	End of 2010 ozone season	June 30, 2011	December 31, 2011	June 30, 2012
Traditional - 8- and 1-hour (Extreme) Nonattainment Area	July 2003	Not yet determined; EPA will develop; see discussion in text	December 31 of the year of the implementa-tion date	June 30, 2010	December 31, 2010	June 30, 2011	December 31, 2011	June 30, 2012
International Transport	July 2003	May 1, 2005	December 31, 2005	June 30, 2007	December 31, 2007	June 30, 2008	December 31, 2008	June 30, 2009

*Dates are as expeditiously as practicable but no later than those listed

**Includes:
1. Areas designated nonattainment for only the 8-hour standard;
2. Areas that are nonattainment for both standards and have attainment dates of 2003 or earlier under the 1-hour standard; and also
3. Other areas that are nonattainment for the 8-hour standard, have not had the 1-hour standard revoked, and are designated attainment/unclassifiable for the 1-hour standard..

Attachment B: Classification Scheme for the PM_{10} NAAQS

	Moderate	Serious
Type of Area Eligible:	All areas designated nonattainment for the PM_{10} NAAQS are initially classified moderate	Moderate areas will be reclassified to serious if EPA determines they cannot practicably attain or they fail to attain
Designation by:	July 18, 2000	Moderate area designation date
Classification by:	July 18, 2000	Depends on timing of reclassification
SIP Due by:	January 18, 2002	Due dates from reclassification: If State demonstrates area cannot practicably attain: BACM SIP - 18 mos., attainment demonstration - 4 yrs. If area fails to attain: both SIPs - 18 mos.
Attainment by: (1)	December 31, 2006	End of 10th calendar year from date of nonattainment designation (December 31, 2010); extensions up to 5 years provided plan for area meets all section 188(e) requirements
Attainment Demonstration:	Local modeling consistent with EPA modeling guidelines and policies	Local modeling consistent with EPA modeling guidelines and policies

Proposed EPA Guidance (November 17, 1998 Draft)

	Moderate	Serious
Emissions Inventory:	Rely on existing inventory guidance	Rely on existing inventory guidance
Control Requirements:	RACM/RACT implemented by July 18, 2004 and based on an analysis of the attainment needs of the area	BACM/BACT implemented 4 years from reclassification; selection of BACM/BACT control measures determined on a case-by-case basis taking into account environmental benefit and energy costs, as well as other costs of implementation.
RFP:	Quantitative emissions reduction milestones to be achieved every 3 years until the area is redesignated to attainment. Within 90 days of the milestone due date, the State must submit a demonstration that all measures in the plan have been implemented and that the milestone has been met. The EPA must determine whether or not the State's demonstration is adequate within 90 days.	Same as moderate areas.
Failure to Make RFP (milestone):	If a State fails to submit a milestone within the required period or if EPA determines that an area has not met any applicable milestone, then, within 9 months after the failure or determination, the State must submit a plan revision that assures the State will achieve the next milestone (or attain the PM_{10} NAAQS, if there is no next milestone) by the applicable date.	Same as moderate areas.

	Moderate	Serious
Contingency Measures for Failure to Attain:	Once a determination has been made that an area must be reclassified as serious due to its impracticability to attain or for failure to attain by the applicable attainment date, contingency measures are then required to be implemented for the area.	Same as moderate areas.
Conformity/ NSR:	Program under EPA regulations as amended	Program under EPA regulations as amended

(1) Attainment is as expeditious as practicable but by no later than the date indicated.

Attachment C: Clean Air Act Legal Authority

1. Introduction
2. Designations for the Ozone and PM NAAQS
3. Subpart 1 Requirements for the 8_Hour Ozone and $PM_{2.5}$ NAAQS
    a. Classifications
    b. Attainment Dates
    c. Nonattainment Area SIP Due Dates
    d. Nonattainment Area SIP Requirements
    e. International Border Areas [New from 8/14/98 version]
4. PM_{10} Subpart 4 Requirements

1. Introduction

This attachment provides the statutory background for designations (and redesignations) for the ozone and PM NAAQS and subpart 1 requirements that apply to the 8-hour ozone and $PM_{2.5}$ NAAQS. This attachment also mentions the subpart 4 requirements that apply to the revised PM_{10} NAAQS.

2. Designations for the Ozone and PM NAAQS

Section 107(d)(1) provides for the designation of areas upon promulgation of new or revised NAAQS.[1] The Act provides for three designations: nonattainment, attainment and unclassifiable. Nonattainment is defined as "any area that does not meet (or that contributes to ambient air quality in a nearby area that does not meet) the national primary or secondary ambient air quality standard" for a criteria pollutant. An attainment area is an area (other than a nonattainment area) that meets the national primary or secondary ambient air quality standard for a pollutant, and an unclassifiable area is one for which the attainment status cannot be determined based on the available information.

Section 107(d)(1) also spells out the timing of the designations process. Section 107(d)(1) provides for EPA to require Governors to submit recommended designations for areas within the State within 1 year of promulgation of new or revised NAAQS. However, EPA may not establish a date

[1]Other provisions in subsection (d) also provide for designations, but do not apply to the initial designations for a new or revised NAAQS. Paragraph (d)(3) applies for purposes of redesignating areas that have already been designated with respect to a NAAQS. Paragraph (d)(4) applied only to the initial designations for the NAAQS that were applicable at the time Congress enacted the 1990 Amendments.

that is earlier than 120 days after promulgation of the NAAQS. The EPA is required to designate areas no later than 2 years after promulgation of the NAAQS; however, EPA may take an additional year (i.e., up to 3 years after promulgation of the NAAQS) if there is "insufficient information to promulgate the designation." In addition, section 107(d)(2)(B) provides that EPA is not required to conduct notice-and-comment rulemaking when making initial designations following promulgation of a new or revised NAAQS.

The timeframes laid out in section 107(d)(1) were recently modified by TEA-21, which was signed into law on June 9, 1998. The TEA-21 affects the section 107(d)(1) timeframes specifically for the July 1997 8-hour ozone NAAQS and $PM_{2.5}$ NAAQS. The timeframe for designations under the revised PM_{10} NAAQS is not affected by TEA-21. Section 6103(a) of TEA-21 requires that the Governors submit recommended designations within 2 years of promulgation of the 8-hour ozone NAAQS (i.e., by July 1999). Section 6103(b) of TEA-21 then requires EPA to promulgate final designations for the revised ozone NAAQS no later than 1 year after the Governors' recommended designations are required to be submitted (i.e., by July 2000).

Concerning the designation process for the $PM_{2.5}$ NAAQS, under section 6102(c)(1) of TEA - 21, States will be required to submit designations referred to in section 107(d)(1) of the Act for each area concerning $PM_{2.5}$ within 1 year after receipt of 3 years of quality assured air quality data from Federal reference method monitors or equivalent monitors. Under section 6102(d) of TEA-21, EPA must then promulgate designations referred to in section 107(d)(1) of the Act for $PM_{2.5}$ by the earlier of 1 year after the date States are required to make their submittal or December 31, 2005.

The EPA has provided guidance on the designations process for the revised ozone and PM NAAQS.[2]

3. Subpart 1 Requirements for the 8_Hour Ozone and $PM_{2.5}$ NAAQS

Implementation of the revised 8-hour ozone NAAQS and the $PM_{2.5}$ NAAQS is governed by the more general provisions of part D, subpart 1, rather than the more specific provisions of subpart 2, which have applied and still apply to the 1-hour ozone standard. These subpart 1 provisions are described here: classifications, attainment dates, nonattainment SIP due dates and nonattainment SIP requirements.

---

[2]See memorandum "Re-issue of the Early Planning Guidance for the Revised Ozone and Particulate Matter (PM) National Ambient Air Quality Standards (NAAQS)," Sally L. Shaver, Director, Air Quality Strategies and Standards Division, June 16, 1998.

a. Classifications

Section 172(a)(1) contains authority for EPA to establish classifications on or after the date EPA designates areas nonattainment for the revised 8-hour ozone NAAQS. (This is distinct from the classification scheme in subpart 2 that applies to the 1-hour NAAQS.) The EPA may classify areas for the purpose of applying an attainment date and for other purposes. In determining the appropriate classification for a nonattainment area, EPA may consider such factors as the severity of nonattainment in the area and the availability and feasibility of the pollution control measures that EPA believes may be necessary to provide for attainment in the area. The EPA must publish a notice in the Federal Register announcing each classification and provide an opportunity for at least 30 days for written comment.[3]

b. Attainment Dates

Section 172(a)(2) provides the attainment dates for nonattainment areas. The attainment date for an area designated nonattainment must be the date by which attainment can be achieved as expeditiously as practicable, but by no later than 5 years from the date the area was designated nonattainment. The EPA may extend the attainment date to the extent appropriate for up to 10 years from the date of the nonattainment designation, "considering the severity of nonattainment and the availability and feasibility of pollution control measures." In addition, EPA may extend the attainment date for 1 additional year if (1) the State has complied with all requirements and commitments; and (2) in accordance with guidance published by EPA, the area has no more than a minimal number of exceedances of the NAAQS in the year preceding the extension year. No more than 2 1-year extensions may be issued.

Under section 179(c) of the Act, EPA can also issue a notice of failure to attain if an area fails to attain by its established attainment date. As expeditiously as practicable after the attainment date passes, but by not later than 6 months after such date, EPA must determine, based on an area's air quality as of the attainment date, whether the area attained the standard by that date. Upon making this determination, EPA must publish a notice in the Federal Register containing the determination and identifying each area that EPA has determined has failed to attain. The EPA may revise or supplement the determination at any time based on more complete information or analysis concerning the area's air quality as of the attainment date. Under section 179(d) of the Act, within 1 year after EPA publishes

[3]However, formal notice-and-comment rulemaking pursuant to the Administrative Procedure Act is not required. The classifications are also not subject to judicial review until EPA takes final action under section 110(k) or 110(l) concerning action on plan submissions or section 179 concerning sanctions with respect to any plan submissions required by virtue of such classification.

the failure to attain notice, each State containing a nonattainment area must submit a SIP revision to EPA. The SIP revision must meet the requirements of sections 110 and 172 and include additional measures as EPA may reasonably prescribe. This would include all measures that can be feasibly implemented in the area in light of technological achievability, costs, and any non-air quality and other air quality-related health and environmental impacts. The attainment date applicable to the SIP revision must be the same as provided in the provisions of section 172(a)(2), except that the 5- and 10-year time periods in section 172(a)(2) would run from the date of the notice under section 179(c)(2). Effectively, this means that the area starts afresh and must attain as expeditiously as practicable but no later than 5 years from the date of the failure to attain notice. The EPA could extend the attainment date to up to 10 years from the date of the failure to attain, provided the statutory criteria were satisfied.

c. Nonattainment Area SIP Due Dates

Section 172(b) requires EPA to establish the schedule for the submission of nonattainment plans at the time EPA designates an area nonattainment. The schedule must include a date or dates extending no later than 3 years from the date of the nonattainment designation.

d. Nonattainment Area SIP Requirements

Designation of an area as nonattainment triggers the planning requirements of subpart 1 of part D of title I of the Act. For the most part, these requirements are set forth in section 172(c). However, section 173 further elaborates the NSR requirements, and section 176 states that federally-supported projects cannot be undertaken if they do not conform to the approved SIP. In addition, certain requirements applicable to mobile sources under title II may also apply.

Section	Requirement
172(c)(1)	**RACM/RACT:** Nonattainment SIPs must provide for implementation of all RACM as expeditiously as practicable (including RACT) and for attainment of the NAAQS.
172(c)(2) and 171(1)	**RFP:** Nonattainment SIPs must provide for RFP. RFP is defined as annual incremental reductions in emissions of the relevant pollutant as are required by part D or may reasonably be required by EPA to ensure attainment of the NAAQS by the attainment date.
172(c)(3)	**Emissions inventory**: Nonattainment plans must include a comprehensive, accurate, current inventory of actual emissions from all sources of the relevant pollutant or pollutants in the area, including periodic revisions EPA determines necessary to assure part D requirements are met.

Section	Requirement
172(c)(4)	**Identification and quantification of emissions from new and modified sources:** This requirement is applicable only within economic development zones identified in accordance with section 173(a)(1)(B).
172(c)(5)	**New source review:** Nonattainment plans must require permits for the construction and operation of new or modified major stationary sources anywhere in the nonattainment area, in accordance with section 173.
172(c)(6)	**Enforceable emission limitations, and such other measures:** Nonattainment plans must include enforceable emission limitations, and such other control measures, means or techniques (including economic incentives such as fees, marketable permits, and auctions of emission rights), as well as schedules and timetables for compliance, as may be necessary or appropriate to provide for attainment of the NAAQS by the attainment date.
172(c)(7)	**Section 110(a)(2) requirements:** Nonattainment plan provisions must meet the applicable provisions of section 110(a)(2).
172(c)(8)	**Allowance of equivalent techniques (e.g., for emissions inventories, modeling, attainment demonstration):** Upon application by any State, EPA may allow the use of equivalent modeling, emissions inventory, and planning procedures, unless EPA determines that the proposed techniques are, in the aggregate, less effective than the methods specified by EPA.
172(c)(9)	**Contingency measures:** Nonattainment plans must provide for specific measures to be implemented if an area fails to make reasonable further progress, or to attain the NAAQS by the attainment date. These measures must be included in the plan revision as contingency measures to take effect in any such case without further action by the State or EPA.
176(c)(1)	**Conformity - transportation and general:** In general, no department, agency, or instrumentality of the Federal Government shall engage in, support in any way or provide financial assistance for, license or permit, or approve, any activity which does not conform to an implementation plan after it has been approved or promulgated under section 110. Conformity is specifically defined in section 176(c)(1)(A) and (B) as meaning conformity to an implementation plan's purpose of eliminating or reducing the severity and number of violations of the NAAQS and achieving expeditious attainment of the standards; and that such activities will not cause or contribute to any new violations of any standard in any area; increase the frequency or severity of any existing violation of the standard in any area; or delay the timely attainment of any standard or any required interim emissions reductions or other milestones in any area.

e. International Border Areas [New from 8/14/98 version]

In 1990, a new section 179B, International Border Areas, was added to the Act. This section applies to nonattainment areas that are affected by emissions emanating from outside the U.S. This section requires EPA to approve a SIP if: the SIP or SIP revision meets all of the requirements applicable to it under the Act, other than a requirement that it demonstrate attainment and maintenance of the relevant NAAQS by the applicable attainment date; and the affected State establishes to EPA's satisfaction that the SIP or revision would be adequate to attain and maintain the relevant NAAQS by the applicable attainment date but for emissions emanating from outside the U.S. Further, any State that establishes to the satisfaction of EPA--with respect to an ozone, CO, or PM_{10} nonattainment area in such a State--that the State would have attained the relevant NAAQS but for emissions emanating from outside the U.S. shall not be subject to the following provisions: extension of the 1-hour ozone standard attainment dates pursuant to section 181(a)(5), the fee provisions of section 185, and the bump-up provisions for failure to attain for ozone [section 181(b)(2)],[4] CO [section 186(b)(2), and/or PM_{10} [section 188(b)(2)] NAAQS.

4. PM_{10} Subpart 4 Requirements

Subpart 4 of part D contains the requirements that applied to the pre-existing PM_{10} NAAQS and that also apply to the revised PM_{10} NAAQS. Guidance on these requirements, including statutory background, can be found in the 1992 General Preamble (moderate areas) and 1994 addendum to the General Preamble (serious areas).

[4]Note that the statute contained an erroneous reference to section 181(a)(2) instead of 181(b)(2).

Attachment D: Rationale for Definition of Attainment Date
[New attachment since 8/14/98 version]

In the 1990 Amendments, Congress provided EPA the authority to grant a 1-year extension of the attainment date for ozone nonattainment areas up to 2 times, provided certain "clean air" and other criteria are met (see sections 172(a)(2)(C) and 181(a)(5)). In addition, under the specific planning requirements for areas subject to the 1-hour ozone standard, Congress established or allowed for compliance dates in or shortly before the attainment year. For example, States were required to require sources to comply with RACT requirements by May 31, 1995 despite a November 15, 1996 attainment date for moderate areas. Similarly, the rate-of-progress requirements (15% and 9% reductions) can be met up to and including the attainment year for moderate and above areas. (See "State Implementation Plans; General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990," 57 FR 13498 at 13509, April 16, 1992; referred to hereafter as the 1992 General Preamble.) In light of the compliance timeframes specified in the Act, as amended in 1990, EPA has, for planning purposes, implied that States could implement emissions reductions needed for attainment as late as the attainment year. Thus, the State would only need to have monitored air quality in the attainment year that was at or below the level of the standard. In such a case, an area could qualify for the first of the two 1-year extensions based on clean data from the attainment year and, presumably, would continue to monitor clean data and could qualify for the second 1-year extension. Relying on data in the attainment year and in the 2 extension years, the area could then seek redesignation to attainment.

For the 8-hour standard, however, EPA believes it is more consistent with the structure of subpart 1 and the form of that standard to require areas to achieve emissions reductions in order to ensure that the 3-year period up to and including the attainment year will be sufficient to demonstrate attainment as defined in 40 CFR 50, Appendix I. Subpart 1 provides EPA and States with more flexibility in establishing compliance dates for emission sources and attainment dates for areas. Thus, using transitional areas as an example, while EPA could retain its previous interpretation of attainment date and establish an attainment date and source compliance date of 2003, EPA also has the flexibility to instead provide that a State must establish a source compliance date of 2003, but allow for an attainment date of 2005. The EPA believes this second approach fits better with the definition of attainment date and the methodology for determining attainment of the ozone standard, which relies on 3 years of data.

Attachment E: Alternative Attainment Demonstration for Areas Affected by Transport

[New Attachment since 8/14/98 version]

For traditional areas, the preferred means for demonstrating attainment at sites is to include them within the modeling domain, as discussed in "Use of Models and Other Analyses in Attainment Demonstrations for the 8-Hour Ozone NAAQS." If a State, however, can show, in consultation with the EPA Regional Office, that modeling is infeasible in an area impacted by transport (e.g., in a mountainous terrain situation), then the following guidance may be used; alternative methods may also be used, subject to consultation and concurrence by the appropriate EPA Regional Office.

First, the State should perform a series of back trajectory analyses originating at the site in the transport area on days when the observed 8-hour daily maxima at the site is $\geq$ .08 ppm and extending 48 hours backward in time. The State should use the resulting information to identify portions of the upwind area's modeling domain most likely to affect observed values at the site in the downwind area. Next, the State should review results of modeled attainment demonstrations for nonattainment areas which cover an adjacent county or portions of the county containing the monitoring site in question.

In flat or rolling terrain, the State should estimate the relative reduction in predicted 8-hour daily maximum ozone occurring in surface cells at the section of the downwind boundary most frequently estimated to affect the rural site (e.g., from the trajectory analyses). For sites in mountainous areas at elevations well above that of the modeled region, the State should estimate relative reduction in predicted 8-hour daily maximum ozone occurring aloft at the section of the downwind boundary most frequently estimated to affect the site in the mountains. "Aloft" estimates are obtained by averaging the 8-hour daily maximum calculated in all cells below the maximum afternoon mixed layer, except the surface cells.

Relative reduction factors should be estimated for each modeled day where the domain is upwind from the site in question. The State should calculate the mean relative reduction factor at the identified portion of the downwind boundary on all such days. After accounting for an irreducible background value for 8-hour daily maxima, the State should estimate a future design value at the site by multiplying the current monitored value times the previously obtained relative reduction factor at the downwind boundary of the nearby domain. Equation (1) may be used to estimate a future design value at a nearby rural site not included within a modeling domain. The equation assumes effects of local emissions near the downwind site are negligible. If this assumption is not valid, the downwind site should be included within a modeling domain.

$$FDV = (RRF)\,(CDV - b) + b \qquad (1)$$

where: FDV is the future estimated 8-hr daily maximum ozone design value at the rural site, ppb

RRF is the mean relative reduction factor, calculated at the appropriate portion of the modeled area's downwind boundary (see preceding discussion), unitless
CDV is the current *monitored* design value at the rural site, ppb

b is an irreducible background concentration, obtained from reviewing available observations, ppb

If the model-derived value for the future design value is $\leq$ 84 ppb, attainment is estimated at the site.

Attachment F: Framework for Planning--Additional Information
[New attachment since 8/14/98 version]

1. The Basis for Regional Air Quality Planning Efforts

Recent Findings. In the 1970's and 1980's, air quality management efforts to attain national standards often focused on reducing emissions from within the local area experiencing the problem. Over time, scientific experts and policymakers alike have recognized that there is a valid basis for pursuing regional planning approaches to help solve ozone, particulate matter, and regional haze problems. Many technical studies have demonstrated the regional nature of these pollutants and associated effects, including the 1990 National Acid Precipitation Assessment Program, the 1992 National Academy of Sciences report on tropospheric ozone, the 1993 National Academy of Sciences report on protecting visibility in national parks and wilderness areas, and recent studies by the North American Research Strategy for Tropospheric Ozone.

The Clean Air Act was amended in 1990 to include several provisions to facilitate the use of regional approaches by the States, tribes, and EPA to address the NAAQS, visibility, acid rain, and other issues. The work of the Ozone Transport Commission, the Grand Canyon Visibility Transport Commission (GCTVC), the Southern Appalachian Mountain Initiative, and the Ozone Transport Assessment Group (OTAG) are examples of regional air quality planning efforts conducted by States, tribes, and interested stakeholders during the 1990's. Much has been learned by States, tribes, EPA, and stakeholders from these and other regional efforts.

In 1995, as a scientific review of the ozone and particulate matter standards was under way and the GCVTC and OTAG were in the process of developing their recommendations, EPA established the Subcommittee on Ozone, Particulate Matter, and Regional Haze Implementation Programs (of the Clean Air Act Advisory Committee) to provide the Agency input on potential policy approaches for dealing with the interstate transport of pollution and its effect on these three programs. The executive summary of the May 1998 "Final Report on Subcommittee Discussions" acknowledged the linkage between ozone, particulate matter, and regional haze pollution and supported future regional planning approaches to address these problems:

> The Subcommittee recognized that there is a scientific basis for pursuing the integration of implementation programs for ozone, PM, and regional haze. Evidence shows that air pollution can be transported long distances, and that many of the emission precursors, atmospheric processes, and spatial patterns of ozone and fine particles (and the resulting regional haze) are common or similar. It was recognized that there are important information gaps and technical challenges to integration of the programs.

Experience has shown that regional planning efforts typically have three basic phases: 1) the developmental phase; 2) the technical assessment phase, and 3) the strategy development and adoption phase. These phases are discussed in more detail elsewhere in this guidance.

Regional Characterization of Pollutant Levels and Visibility Impairment. Although much will be learned in the next few years from the collection of $PM_{2.5}$ monitoring data nationally, existing data from State and tribal monitoring programs, the IMPROVE network, and special studies enable us to draw certain general conclusions about the spatial scale of $PM_{2.5}$ concentrations and visibility impairment levels. On a regional scale, $PM_{2.5}$ concentrations and visibility impairment are higher and more regionally homogenous in the Eastern U.S. than the Western U.S. In the East, sulfate is the primary contributor to $PM_{2.5}$ concentrations and visibility impairment, even in most rural areas. Pollutant levels and visibility impairment are typically highest in the summer, in part due to increased energy demand and higher average humidity levels (which increase the light scattering efficiency of sulfates, nitrates, and some organics). Although the implementation of the acid rain program is expected to significantly reduce $PM_{2.5}$ concentrations across the East, a number of urban and suburban areas in the East still may be designated as nonattainment for $PM_{2.5}$, possibly extending through some of the more densely populated urban corridors on the east coast, midwest, and southeast. The regional nature of acid rain throughout the East already indicates that $PM_{2.5}$ nonattainment areas in the East are expected to have some component of regional contribution of sulfate to the problem.

In the West, it is expected that there will be fewer $PM_{2.5}$ nonattainment areas than in the east, and in contrast to the East, those areas likely will be more geographically dispersed and more discretely defined. Sulfate constitutes a significant amount of $PM_{2.5}$ mass in the West as well, but not to the degree that it does in the East, and other $PM_{2.5}$ constituents (such as organics, nitrates, and crustal material) make up larger fractions in comparison to the East. Because of the lower levels of pollution and the greater sensitivity of Western Class I area visibility to small changes in $PM_{2.5}$ concentrations, regional transport has already been identified as a major issue across the West for visibility. In fact, the GCVTC recommended a series of strategies to be implemented across a 9-state region to improve visibility in the 16 Class I areas on the Colorado Plateau.

Monitoring data show that broad areas of the Eastern U.S. experience elevated ozone concentrations, similar to the regional scale observed for particulate matter pollution and related acid deposition and visibility effects. Ozone values in the East typically are highest in the summer months. Past efforts to control ozone concentrations have emphasized reducing emissions of volatile organic compounds, primarily within nonattainment areas, from such sources as motor vehicles, chemical plants, and users of industrial solvents. With greater understanding of the regional nature of ozone, the recent recommendations of OTAG now focus on reducing nitrogen oxide emissions from large power plants

and industrial boilers, many of which are located in attainment areas but which have been found to contribute to nonattainment area problems.

There are also similarities between the spatial scales of ozone and particulate matter pollution in the Western U.S. There are fewer ozone nonattainment areas in the Western U.S. and they are more geographically dispersed than in the East. Ozone is a major concern in certain large western urban areas, such as Los Angeles, Houston, and Phoenix. It is also becoming more of a concern in many of the less populated but rapidly growing western urban and suburban areas.

2. Timing for $PM_{2.5}$ and Regional Haze SIPs

The timing requirements for $PM_{2.5}$ and regional haze planning and strategy development activities have been modified by the recently passed TEA-21. The legislation calls for the national $PM_{2.5}$ monitoring network to be deployed by the end of 1999. (Some sites will have been established in late 1998.) After 3 years of data are received for an area, the State is required to recommend designation status within 1 year. The EPA is then required to designate the area within 1 year, and all areas are to be designated no later than December 2005. Thus, the latest $PM_{2.5}$ nonattainment SIPs would be due in December 2008. The earliest $PM_{2.5}$ designations might occur in 2004 and the earliest $PM_{2.5}$ SIPs would be due in 2007.

Under TEA-21, regional haze SIPs now are not due 12 months after promulgation as required in section 169B of the Act. They are now tied to the dates that areas are designated as attainment, unclassifiable, or nonattainment for $PM_{2.5}$. Specifically, regional haze SIPs are due either: 1) 1 year after an "area" is designated attainment or unclassifiable, or 2) at the same time as $PM_{2.5}$ SIPs are due for nonattainment areas. The Congressional Conference Report on TEA-21 calls for harmonizing regional haze plans with $PM_{2.5}$ nonattainment plans. Regional haze SIPs for attainment areas would be due from late 2003 to late 2008, while regional haze SIPs for nonattainment areas would be due from late 2005 to late 2008. In addition, the legislation includes a provision that does not preclude the GCVTC States from implementing their recommendations earlier than these dates. The Western Governors Association have requested that the regional haze rule require nine Western States (Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, and Wyoming) to submit SIPs in 2003 to implement the recommendations of the GCVTC.

While the deadlines and statement of intent are generally clear, the TEA-21 legislation does not address the deadlines that would apply for a regional planning effort that incorporated *both* attainment *and* nonattainment areas. While certain Class I areas may be affected only by emissions from attainment and/or unclassified areas, we do not believe that Congress intended to inhibit regional planning efforts by requiring area-by-area submittals when both attainment and nonattainment areas are

designated within a State. We believe that this result would not be consistent with the nature of the regional haze problem, which aims to address pollutants which can travel hundreds of miles. Additionally, we do not believe that this result would be consistent with the expressed intent of Congress to harmonize regional haze planning efforts with those for $PM_{2.5}$. Accordingly, EPA intends to incorporate an optional approach into the final regional haze rule which will allow States to first submit SIP revisions which commit to specific regional planning efforts but which do not set forth control strategies. These initial SIPs would not be due earlier than those regional haze SIPs required for attainment areas under TEA-21. Under this approach, States committing to regional planning would have coordinated deadlines for regional haze control strategies for unclassifiable, attainment and nonattainment areas within a single planning region. This approach could have the effect of delaying control strategy plan submittal dates for some areas, but we believe that such an option will support effective coordination between the $PM_{2.5}$ and regional haze programs and is consistent with the statement of congressional intent.

Attachment G: Guidance for Using Modeling and Supporting Analyses to Evaluate Emissions Reductions Strategies

[New attachment since 8/14/98 version]

1. What is the purpose of this document?

The purpose of this document is to provide guidance on using photochemical grid modeling and other corroborative information to evaluate the impact of emissions reductions on county-specific ozone air quality design values. The guidance is specifically designed to provide streamlined attainment demonstration techniques for areas that want the transitional classification. (See implementation guidance at the following web site: http://www.epa.gov/ttn/oarpg/t1/memoranda/implguid.wpd .) To support the analyses for these areas, States are encouraged to make maximum use of available modeling. However, this does not preclude States from electing to do additional modeling, if States desire to do so. There are four basic kinds of transitional areas based on their attainment demonstration needs.

First, **Areas Projected to Attain Through the NOx SIP Call** may use the EPA modeling performed in support of the NOx SIP call. No additional modeling is required. Based upon EPA's review of the expected improvements in ozone air quality when the NO_X SIP call is implemented, these areas are expected to attain the 8-hour NAAQS. Section II of this document describes the modeled "rollback" approach used by the EPA to perform the review.

Second, **Areas Within the OTAG Modeling Domain that Received the NOx SIP Call and Are Not Projected to Attain Through the NOx SIP Call** may also use the EPA modeling performed in support of the NOx SIP call. No additional modeling is required for these areas. However, additional analyses and perhaps additional control measures beyond the NOx SIP call are needed. Based upon EPA's review, these areas are expected to attain the 1-hour NAAQS and come close to attaining the 8-hour NAAQS when the NOx SIP call is implemented. Since EPA's review indicates these areas will not attain through implementation of the NOx SIP call, then these areas may consider corroborating information to determine the likelihood that the controls will achieve attainment, as discussed in Section III. If this review indicates controls will NOT achieve attainment, simplified techniques, described in Section IV to estimate additional controls, may be used. However, the simplified techniques are more simplistic than the modeled "rollback" and are recommended when the design values are close (e.g., < 90 ppb) to the level of the ambient air quality standard. If projected air quality concentrations after application of controls are greater than or equal to 90 ppb, modeling of additional controls may be necessary.

Third, **Areas Within the OTAG Modeling Domain that Did Not Receive the NOx SIP Call** may use the EPA modeling performed in support of the NOx SIP call. These areas may also follow the same streamlined procedures provided for areas within the OTAG modeling domain that received the NOx SIP call. However, since the finer grid modeling is not available to these areas, additional modeling may be required. If projected air quality concentrations after application of controls are greater than or equal to 90 ppb, modeling of additional controls is required.

And fourth, **Areas Outside the OTAG Modeling Domain** may follow the same streamlined procedures provided for areas within the OTAG modeling domain. Areas with ozone air quality design values close to the level of the NAAQS (i.e., < 0.09 ppm) may use the simplified techniques described in Section IV to estimate additional controls needed to demonstrate attainment; such techniques do not require additional modeling. Otherwise, States may use the modeled "rollback" approach described in Section II to identify controls needed to demonstrate attainment. This approach requires that modeling results are available. If results from the "rollback" approach indicate the controls will fall short of attainment, the State may review corroborating information as described in Section III. If corroborating information indicates controls will achieve attainment, no additional measures are required. If the "rollback" procedures and the corroborating information both indicate that the controls will fall short of attainment but are close to attainment (e.g., < 90 ppb), the simplified techniques described to estimate additional controls may be used.

In summary, paragraph 2. of this attachment describes a modeled "rollback" approach which may be used to evaluate the impact of a modeled control strategy on county-specific ozone design values. This is the procedure used by EPA to evaluate the impact of the NOx SIP call. In the example, 3 multiday episodes and regional scale modeling are used. The approach may be altered to accommodate any number and length of episodes and address different grid cell sizes as being representative of a county. If the results of the modeled "rollback" approach indicate some counties may not attain with the set of controls modeled, there is a need to review corroborating information to determine the likelihood that the controls will provide for attainment. If this review indicates the controls will not provide for attainment, then additional controls need to be identified. Section III discusses the use of corroborating information in a weight-of-evidence analysis approach to determine the likelihood of attainment, and Section IV describes a technique for identifying additional controls beyond those simulated by the model. Several techniques using the model's predicted change in ozone in response to VOC and NOx controls, and air quality and emissions trends data are described.

2. How do I determine the impact of a modeled control strategy on county-specific design values?

This procedure estimates which counties come into attainment based on a "rollback" of county-specific design values. The design values are derived from 3 years of ambient measurements. The "rollback" factors are based on the reduction in ozone (base year versus control strategy) predicted by a regional scale model during 3 ozone episodes. This information is useful for comparing the relative air quality improvements of alternative control options and for supplementing other analyses. Regional results may not be sufficient for an urban-scale attainment demonstration in all situations; therefore, States may choose to do additional modeling/analysis.

The underlying approach for this analysis involves applying the ozone reductions predicted for a control strategy to ambient data to estimate the expected impacts of the strategy on ozone concentrations. This approach includes the following components:

- the 8-hour ozone design values (DVs) based on ambient measurements are calculated by county for those counties in the modeling domain that had valid monitoring data during a recent 3-year period;

- the model predictions are used in a "relative sense" to estimate the change in ozone levels expected as a result of the controls;

- the predicted changes in ozone are applied to the ambient DVs to "adjust" these values to reflect the effects of the controls; and

- the adjusted DV's are compared to the level of the NAAQS (i.e., 0.08 ppm) to estimate whether the controls would provide for attainment.

Each of the components of the analysis is described in more detail in the following sections.

a. Calculation of Ambient Design Values

Ambient DVs are calculated for each ozone monitor within the modeling domain. These values represent the 3-year average of the 4th highest 8-hour daily maximum ozone concentration for 3 recent years. County-specific DVs are determined by noting the county in which each monitor is located (for counties with multiple monitors, select the highest DVs from among all monitors in the county to represent the county).

b. Analysis of Model Predictions

Ozone predictions for the modeled base case and control case are used to estimate county-specific "adjustment factors" that reflect the percent change in ozone levels due to the controls. The

procedures for deriving these adjustment factors are described in this section. The calculations in steps 1 through 4 are made for each grid cell in the domain. In step 5, the data are translated from a grid-cell basis to a county basis. Also, the calculations in steps 1 and 2 are made for both the modeled base case and the control case. Data from these two scenarios are then combined in step 3.

Step 1: The base case is selected to represent the recent 3-year period used in calculating the ambient DVs. Base case emissions are representative of this time period. The control case emissions are reflective of base case emissions grown to a future date with Act mandated controls plus additional controls expected to provide for attainment. Several episodes representative of high observed ozone and frequently occurring meteorology are selected. Daily maximum 8-hour ozone concentrations are then calculated from hourly ozone values predicted during appropriate episodes for both the modeled base case and the control case. These 8-hour concentrations are determined based on the 17 possible running 8-hour averages within a single 24-hour period (i.e., there is no overlap between days in calculating 8-hour values from model predictions).

Step 2: Using the data developed in step 1, the 1st, 2nd, and 3rd highest 8-hour daily maximum ozone concentrations in each episode is selected for further analysis. For each of these three values, the averages across the episodes are calculated (e.g., the highest 8-hour daily maximum ozone concentration in each of the episodes is averaged to derive a single average value for each grid cell; the 2nd and 3rd highest values are treated in a similar manner). The generic formula for calculating the average ozone values for both the modeled base case and control case is:

$$AVoz(n)_i = [\ (\ episode1oz(n)_i + episode2oz(n)_i + episode3oz(n)_i\ )\ /\ 3\ ]$$ where,

$AVoz(n)_i$ is the 3-episode average of the n^{th} highest 8-hour daily maximum ozone concentration in grid cell "i",

$episode1oz(n)_i$, $episode2oz(n)_i$, and $episode3oz(n)_i$ are the n^{th} highest 8-hour daily maximum ozone concentrations in the 1st, 2nd, and 3rd episodes, respectively, in grid cell "i", and

n = 1, 2, and 3, the ranked value of the selected day within modeled episode.

The average 1st, 2nd, and 3rd highest 8-hour daily maximum ozone values are used to provide a robust estimate of the "adjustment factor." The result of step 2 is a data set containing values of the 3-episode average 1st, 2nd, and 3rd highest daily maximum 8-hour concentrations for each grid cell for both the modeled base case and control case.

Step 3: For each of the 3 average ozone concentrations calculated in step 2 for each grid cell, the predicted percent change in ozone between the modeled base case and control case is calculated:

$PCoz(n)_i = 100 * [(CCAVoz(n)_i - BCAVoz(n)_i) / BCAVoz(n)_i]$ where,

$PCoz(n)_i$ is the percent change in the average n^{th} highest 8-hour daily maximum ozone concentration in grid cell "i",

$CCAVoz(n)_i$ is the 3-episode average of the n^{th} highest 8-hour daily maximum ozone concentration in grid cell "i" for the control case, and

$BCAVoz(n)_i$ is the 3-episode average of the n^{th} highest 8-hour daily maximum ozone concentration in grid cell "i" for the base case.

The result of step 3 is a data set containing the percent change in ozone for each of the 3 averages (1st, 2nd, and 3rd highest values) for each grid cell.

Step 4: The "adjustment factor" for each grid cell is calculated as the mean of the percent change values for the 3 averages derived in step 3:

$ADj_i = [(PCoz(1)_i + PCoz(2)_i + PCoz(3)_i)/ 3]$ where,

ADJ_i is the "adjustment factor" in grid cell "i", and

$PCoz(n)_i$ is the percent change between the modeled base case and control case in the 3-episode average of the n^{th} highest 8-hour daily maximum ozone concentration in grid cell "i".

Step 5: The "adjustment factors" developed in step 4 for each grid cell are translated to county values by assigning grid cells to counties based on the areal coverage of the grid cell within a particular county. The grid cell covering the largest portion of the county is selected to represent the county. For counties wholly containing more than one grid cell, the grid cell with the highest predicted base case 8-hour daily maximum ozone concentration is selected to represent that county. Only counties with monitors are assigned a grid cell to represent the county. The result of this step is a set of county "adjustment factors."

Step 6: The county-specific ambient DVs calculated in step 1 are adjusted to reflect the controls in the control case by applying the "adjustment factors" derived in step 5 to the ambient DVs. This process produces a set of control case adjusted DVs, referred to below as control case DVs".

Control Case DV (c) = DV (c) * {[1 + ADJ(c)]/100}] where,

Control Case DV (c) is the estimated design value in county (c) after the application of the Control Case controls,

DV (c) is the ambient design value based on the recent three year period in county (c), and

ADJ (c) is the adjustment factor for county (c).

Step 7: The magnitude of the control case DVs for each county is then examined to determine which counties have values $\geq$ 85 ppb and, therefore, do not demonstrate attainment. Counties with ambient DVs $\geq$ 85 ppb based on the recent 3-year period that have control case DVs < 85 ppb are estimated to "come into attainment" after the controls in the control case are implemented. Counties with ambient DVs $\geq$ 85 ppb based on the recent 3-year period that also have control case DVs $\geq$ 85 ppb are estimated to "remain nonattainment" after the controls in the control case are implemented.

3. What do I do if the results of the modeled "rollback" approach indicate some counties may not attain with the set of controls modeled?

If the results of the modeled "rollback" approach indicate some counties may not attain with the set of controls modeled, there is a need to review corroborating information to determine the likelihood that the controls will provide for attainment. The corroborating information may be considered in an extended "weight-of-evidence" analysis that brings into consideration other factors such as model-predicted improvements in the number of hours and size of area predicted to exceed the level of the standard, observed air quality trends, emissions projections, ratios of indicator precursor species and results of other observational based analysis methods. The weight-of-evidence approach was used to support many of the 1-hour ozone SIP's and is documented in sections 4.2 and 5.3 of the "Guidance on Use of Modeled Results to Demonstrate Attainment of the Ozone NAAQS", June 1996. **4. How do I identify additional controls without running the model?**

This section describes a technique which may be used to identify additional levels of control when the modeled "rollback" approach falls short of reaching the level of the ambient air quality standard and the weight-of-evidence analysis indicates that the control measures modeled are not likely to provide for attainment. The basic steps are as follows:

Step 1: Correlate changes in ozone concentrations (adjusted for year to year variations in meteorology) with changes in emissions to estimate emissions reductions needed to generate 1 ppb improvement in ozone, (i.e., a "normalized" emissions reduction factor).

Step 2: Calculate the amount of ozone reduction needed as the difference between the county-specific design value and the level of the ozone NAAQS.

Step 3: Calculate additional level of emissions reductions as the product of the "normalized" emissions reduction factor (step 1) and the amount of ozone reduction needed (step 2).

Two methods for determining the "normalized" emissions reduction factor by correlating changes in ozone with changes in emissions (both VOC and/or NOx) are discussed in the following paragraphs. The first method uses ambient observed ozone concentrations and the second uses model predicted ozone concentrations. Both methods are more simplistic than the modeled "rollback" and are recommended when the design values are close (e.g., < 90 ppb) to the level of the ambient air quality standard. These two methods may be used independently or in concert with each other.

The first method correlates the changes in ambient observed air quality ozone levels with changes in the emissions over the past 10 years. Ozone air quality trends are adjusted to account for variations in the meteorology from year to year. Compare changes in the adjusted ozone trends with changes in VOC and NOx emissions to estimate what percentage change in emissions (both VOC and NOx) will result in a 1 ppb change in ozone (i.e., "normalized" emissions reduction factors). For example, if on the average in the past 10 years, a county's design value concentrations have improved by 20 ppb and the county total emissions for NOx have been reduced by 20 percent, it can be inferred that a 1 percent reduction in NOx will improve ozone concentrations by 1 ppb. In this case, the "normalized" emissions reduction factor for VOC is 1 (unity). Therefore, if the results from applying the NOx SIP call resulted in a design value of 89 ppb, then an additional 5 percent reduction in NOx is needed to lower the 89 ppb to the level of the standard, 84 ppb. Repeat the analysis to determine what additional level of VOC controls is needed, as well.

The second method uses the modeled response to various VOC and NOx control strategies to derive the "normalized" emissions reduction factor. Since control strategy analyses and diagnostic/sensitivity analyses are recommended when the model is setup to run a particular application, these results should be available for review. In many cases, these analyses include a combination of across the board, domain-wide, reductions in VOC and NOx, as well as specific control measures. These model results give a broad indication of how ozone peaks and spatial distribution are expected to change in general with respect to VOC and/or NOx reductions.

Three examples of using the modeled predictions to derive the "normalized" emissions reduction factor through the relationship between reductions in VOC and/or NOx and improvements in ozone concentrations are as follows.

Example 1:

Correlate changes in modeled predictions to changes in emissions before and after controls. Using modeled predictions, calculate an average of the daily maximum 8-hour ozone concentrations for each county and from model inputs calculate total emissions for each county. Perform these calculations for both before and after controls. Calculate the differences in the average daily maximum 8-hour concentration before (AVGb) and after (AVGa) controls and compare to percent emissions reduction reflected in the control strategy. Calculate percent emissions reduction by first calculating the fractional reduction in emissions (i.e., 1 minus the ratio of total emissions after (TEa) controls to before (TEb) controls) and then multiplying by 100. Calculate the percentage change in emissions for a 1 ppb improvement in ozone concentrations (i.e., "normalized" emissions reduction factor, NEF) by dividing the percent emissions reduction by the difference in the average daily maximum 8-hour concentrations, as follows.

(1) $PR_{i,p} = [1 - (TEa_{i,p} / TEb_{i,p})] \times 100$

(2) $NEF_{i,p} = PR_{i,p} / (AVGb_{i,p} - AVGa_{i,p})$

Where:

PR	=	percent emissions reduction
NEF	=	"normalized" emissions reduction factor
TEb	=	total emissions before controls
TEa	=	total emissions after controls
AVGb	=	average (across all days) daily maximum 8-hour ozone concentration before controls
AVGa	=	average (across all days) daily maximum 8-hour ozone concentration after controls
i	=	county-specific value
p	=	value for specific precursor emissions (i.e., VOC or NOX)

Example 2:

Using the modeled predictions from the NOx SIP call, calculate the levels of NOx and VOC reductions needed to generate a 1 ppb improvement in the daily maximum 8-hour maximum ozone concentrations. Following the second equation above, calculate the differences in the average daily maximum 8-hour concentration before (AVGb) and after (AVGa) controls and compare to percent emissions reduction reflected in the NOx SIP call control strategy. Divide the percent emissions reduction (PR) by the difference in the averages before and after control to calculate the percentage change in emissions needed to generate a 1 ppb improvement in ozone.

Example 3:

Review plots of domain wide peak ozone concentrations as a response to VOC and NOx controls. In these plots, VOC and NOx levels of reduction are the x and y-axises and daily maximum 8-hour ozone concentrations are represented as isopleth curves on the plot. On each plot, indicate the location of the modeled strategy closest to the level of the standard (e.g., 75% NOx and 25% VOC). Read off the plots the domain-wide maximum 8-hour concentrations before and after controls. Calculate the average across days of the domain-wide daily maximum 8-hour concentrations before and after controls. Calculate the difference in these averages. Again following equation 2 above divide the percent emissions reduction by the change in daily maximum 8-hour concentrations to calculate a "normalized" emissions reduction factor.

For example, if the maximum 8-hour concentration was reduced from 150 ppb to 84 ppb on day 1 and 105 ppb to 96 ppb on day 2, the difference in the averages before and after controls would be 37.5, (average before controls, 127.5 ppb minus average after controls, 90 ppb). In this case, on average the model predicts 37.5 ppb improvement in ozone for 75% reduction in NOx which means a 2 percent reduction in NOx is expected to improve ozone by 1 ppb (75% divided by 37.5 ppb).

Results of any of these three analyses may then be used to calculate the additional levels of reduction needed to lower the county ozone design value to the standard by multiplying the "normalized" emissions reduction factor times the change in ozone needed to reach the NAAQS. For example, if a 2% reduction in NOx generates a 1 ppb improvement in ozone and results from applying the NOx SIP call resulted in a design value of 89 ppb then an additional 10 percent reduction in NOx would be needed to lower the 89 ppb to the level of the standard, 84 ppb. In this case, repeat the analysis to determine what additional level of VOC controls is needed, as well.